## **COMPUTERWOR**

#### Bank launches major 'MacWindows' seeds sown client/server overhaul

Emulator to enable Apple's PowerPC to run Chicago applications HFC invacto \$0.1M in convencion

While other financial institutions gingerly place client/server computing here and there. Household Finance Corn has commenced a sweeping Son million project that will take 80% of the processing off its IRM and Amdahl Corn.

mainframer by the end of 1007 Mar and it nutting

about come to work at its branch. -- with a rem our tomor service englise tion - as have many others - but it is also morting core

back-office production apolications such as general Independent internation The whole gamut

Ours is a soun-to-nuts archildrene " soul Edward F Sterba, director of business

outcome at the December Houghts III. commons The holdness of HFC's

post this not been lost oil

house to do like more to obentirement around the edit. en in the branch anomale. even and the second contracts hanking counting and Mary Dorosdon: a research

prograte at Mentis. Corp. in Salisbury. Md She said she no unon one of sm other hank that has made this kind of

chentiserser archi-COntract and the Thirty the departies we are stand but they but of a disposted the dollars "she said Rs Landa Radovenich

During the next year RFC has niloted meres of the architecture, called the Vision System in 14 of its 467 branches Until now, HFC branches baxe used 3276-

style dumb terminals con-HFC, more 14 elear that while they are maximum.



TCP/IP inventor and internet to Vinton Corf says (se mother of all

0012 6 XC -

petworks peeds better indexing and bandwidth on demand to attract more business users. See in Depth. page 121

The problem with cost-justifying a wireless perwork is that times it's almost impossible. See Management, page 99.

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Bernaning this full, users will have access to empletion softs are that actives to commission work are than Manager to an about the contract of the same topic Computer for Power. PU-based system moving them re eased system, moving to les entre Coleman les le Morte ment the needest colled SoftWitt-

Incomes's Marentosh product management will much be employed on Intel Corn, 1486 processor tath on then empleted Windows 40 (Charage) steelf This means were will still have to purchase Windows software to tun Windows ancommutment to a

From a distance pre PowerPC shipments are sed to grow at a steady rate ling to expand the potential leave base for Wireless and

Microsoft Corp officials soul the atternosit cuth annerans susatus Winds Many of South County and the willian any design of the state enables a caranhant anniest on to run on both Wandotte 4 ft and Win-

desc. 372 RAM plan

Apple plans to ship SoftWindows for the Mac on all of its Powerty. based Macanash machines with 16M bates of RAM Institute with also sell a retail sersion Kerrsmid An enternal Apply source costligrared the hasars of the dead A noncommunal pursum of the

- a delinger of the backles his to the MacWindows, page 12

#### Users brace for LAN mail wars

the between Letter, all to one up Community or committee that the standard transfer is the standard transfer in the standard transfer in the standard transfer is the standard transfer in the standard transfer is the standard transfer in the standard transfer is the standard transfer in the standard trans nancoh which includes more natur controls were had better out set proud database medication and is based on Notes, and Mercasol's for the heatle of the LAV morror ing architectures. In intervense method which links several prodlast week Letus Development Corn and Microsoft Corn made it

note The Enterprise Messegner Server currently in hera resume will some as Marsacoll's messag. omeniations. else they are going In general, the move to elecat in different there-

roor messaging could help solve the neoblems users have with to

day's file-sharing electronic-mult and a m

Small accommodations The peoblem we have with LAN mod wit does n't contoned and the menegyment tools are weak "sixed Durwin Sharp, an E-mail advisor at Exxon Corp While 5,000 to 6,000 E-mail overs fit on a mainframe not a few hundred fit on a LAN

medicanur Toonee menatoment LAS mail wars, page 10

Techno-aamblina

#### High-tech wagering: Jacknot or ieopardy?

By Joseph Martista

The temperature is near yero on this Saturday night in Pawtucket, R.L. but in the lounge of the Propermili Restaurant Flaine Matook feels mages and looky

"It's my birthday," the 35-year-old bottemakor explains as a waitress feeds betting slips into a nearby ber-side terminal

On this January evening, Matook plans to anend between \$25 and \$50 on \$1 tickets for the state-run electronic Keno game played every five minutes until 11 p.m. in Peppermil's bar.

"If I didn't spend [money] bere. I'd spend it on some other name," she expisins. As results from the previous game flash High-tech wagering, page 28

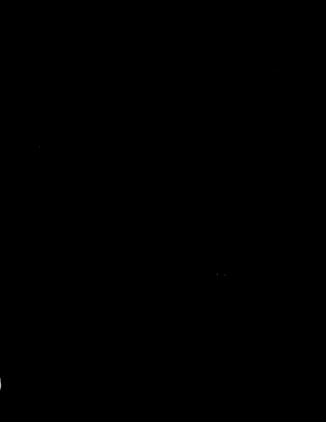


der attack from gambling for

"Knowledge is power."

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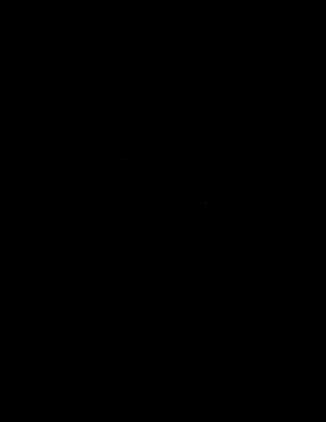
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#### DE-ENGINEEDING THE MUDADI VCE



«Dicital Roulement Corn's Windows NT

stratory back free evenus it plans to announce

a force way Alpha machine in the contact fines of

Storage management vendors set with the

acoust apcouning rese

Not Ware program Progr 7

annuion of its BS/5000 Days 8

ers with ungraded PC models. Page 12

contrate on its own PowerPC Prov. 17

The chip wars kick into overdrive as IBM for-

more the right to make intel's Pentium to con-

last week as Cabletron unveiled its next error

8Dun & Bradstreet expelsive its elient/server

and many CICE Ange 8

Attendage at Executive

Technology Summit '94

swap stories and listen to

speakers about client/

server and other tonies

The line between motor

and bub became fuzzier

anation "aumorbub " firms 16

Brose 15

and in contains to so tailing restants are comming regulations took no logy can halo delight their ers (left) Page 113 Provings ruge / /J. Proving a in and on any match 

## MANAGEMENT



#### Executive Briefing

We have seen the multimedia future and it is here? Yes nieces are still missing but today's DCs and notobooks one already handle techno foats includ inguidecoonformating faving from airplance and enesker independent union recognition. Rest of all most of this can be done with readily available mar Banes & 41 and 65

But not all technology takes off so quickly Apple's Newton as well as other nervened durital assessants are furtilized to make an impact as other personal agriculturants, are righting to make an imposshelled out cash to own PDAs; there has yet to be any simificant company to how in Done 27

one said client/server would be easy. Well, maybe they didbut that was before new studies newed what most I. AN administrators know intuitively. There are few products and need to sanely manuare distributed enterprises. I seek are paying for this in lost need serious constitute and revenue losses to the tune of \$3.8 million per company. Meanwhile, as Rockwell

International's Space Division has learned, it is not easy to sources large databases onto tiny networks. Pages 53 and 54

Applying for its own area code. That would have been the next step for Northwestern Mutual Life and its hundreds of phone rembers on the incurrence that led its data transmission network o satisfy its 2 200 remote users with faster and easier access to ation. The net results also include lower costs. Proc 65

ever let 'em see you sweat. Neontisting with vendors is tought then it's duer been an users and industry players of all strings share strategies. "If you invite on-site vendors into your secure areas, open up your proprietary information to them and let them play on your composale willowhall team you can't expect to be able to peruliate with them," one expert sure. Planes 69 and 122

Descuing "rotting" data. Government information that has long been out of sight is no longer out of mind, thanks to some arrencies use of CD-ROM. Because of dropping prices for optical technology taxbayers can finally set a neek at federal research for topics. renefine from natural diseasees to NASA state Brose 79

Oh, and I needed it yesterday. Cranking out applications for at the top of many IS managers' most-wanted lists, and previous neomine to bein numn un the volume. New nackages bein move lest. acy systems to client/server platforms. Pages 95 and 96

Cornerate homes. IS now who can be in their employers cone with disasters will be in high demand, observers predict. It may mean ending time and money learning new skills, but that investment will most likely pay off big. Page 123

terrestrict writers and editors have individual MO Mell a four staff members can be reached on MO Mell by addr as to their first and last names as they appear on the problem list of editorial MO Mell addresses, call (cold) to

e: Contact Sharon Bryant at (508) B20-B125.

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#### ENTERPRISE NETWORKING

Wannenshillity Southillity and some of use . rather than price - top users' list of concurre regarding remate office their Page 59

#### Now that the burn are more from Nevell's Vin-

tual-Loadable Module, the real work herins Tales from the front Pinderbut installs a Meanwhile the company provides some details Install laly properties from 60 about uncoming polynous of its Appliformal APPLICATION DEVELOPMENT

#### Competing object or lented in company Store 66 #IRM readles a symmetric multiprocessing

MANAGEMENT New systems management tools let users Money isn't everything. as companies trying to continuity wireless or • IIIM attempts to coolbo discriptied exclore-Endingout Spor 99



IN DEPTH "Up close and personal with

#### Vinton Carl, recently appointed tenior vice provident of data architecture at MCI. Stope 191

#### CARCERO #Aithough fewer than 15% of all compan TECHNOLOGY

have a full-time disaster recovery staff, on ployers say contingency planning Experience is important. Page 123

#### MADVETRI ACE \*Three- and six-month PC software support

contracts help keep service costs and quality in line. Page 132

#### COMMENTARY Max Hopper talks about where the info tion highway may load Stone 55

Paul Gillin rails against Version x.x of vapor worse Done to

Does IS have a future as a corporate strategy maker? Thomas Buckholtz says to think be fore you answer. Page 165

Calendar		Page 100	
Company Index	-	Page 138	
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Friday Stock Ticker .....

#### A cross platform database query tool hits the streets. Proc 24

manufacturing offering, Page 20 COMPLETED INDUSTRY **PC** hottom-feeders detail survival tactics. Page 30

#### DESKTOP COMPUTING Users look forward to being able to plug and

play. Page 37

#### WORKGROUP COMPUTING

Retailers discuss customer service and the information highway. Page 53

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#### Compag subnotebook to rev sales

Compag Computer Corn.'s featherweight Conturn Association about a with its undered moutht and price should lift a load off the purtable market. Aero may also source in a load of the purtable market. Aero may also spark rapid price drops in the notebook arona, which have a few manufact to small the manufact filling bettler of the deakton price wars

Available now the monochrome hare waishs only 3% Arthur Low Com

bonner/men a bassine in 30 days weighs 4.2 Total travel pounds. Total , trave ternal floory drive and adanter cord is less then 5 nounds for the hase model which shaves almost helf the weight from a normal



agus irom a uo Plus. Compag's pricing is some 20% lower than other anhantehooks which tend in cost more than similarly configured notebooks. For example, Toshiha America Intermedian Systems for in twingto position its Entel. lite line of notebooks against the Aero rather than anning the more expensive Portege line of subnote-

Ages "in priced to fly and I think it's stirring up the not his time," said Jamet Cole, an analyst at Dataquest.

have caused both analysts and pages to take note. They are predicting a shift in buying patterns to the smaller mer preserving a same in majoring passeries to the simulation machines, which were not expected to make much

Bactures, which were not exagenty in the market this year. Rendal Ginsto on analyst at WorkGroup Technologies face "Libourba there would be a lot more combromistic

and that it would be no a higher name Some analysts were ious improved with the

> ero. submotobook market had det's set bloss it out of proportion," said Jeffrey Henning, an anabout at RIS Strategic Decisions in Norwall

Muss He said the lack of an internal florey would slow market accommance of the gas tambés tas Francisco.

Francisco contented comments unid form's price/perfor.

mance could lead to revisions in their purchase plans I would answer your atmosts that Aero will cannibelieve tot of the LTE I its business " said Glore Just mann section manager of office technology at Bexter and, section manager or unice accomongy as notices nac's high-end LTE Lite notebook. He said Aem was einerRevier to look closely at moving many of its nonable purchases to submotehooks

nine looking at more to come our posts For companies looking at ways to carve out costs, why spend \$4,000 or \$5,000 when you can get a

Jarmana also said many managers at Baylor want commencion because for their notebooks both as the office and at home and this are not more than the miss of two decision commuters. The Aero, with its low price in design computers, the Aero, with its low price points and see expe

...... Price is important

of office systems technology in Irving, Toxon surreed that Acrodyme aradiacts "are particularly appealing bewater of the prior point. It's almost changer and more cause of the price point, it is almost encuper and more home and one for suck "He added that notebooks typisolly last only 15 months, making them an expensive

Analysis speculated that Compan, which has not made significant registers to its high-end LTF Lite line in two warry pould be readying a low-cost version of that product on well

William T. Peterson III, Compaq's director of North American portable murbation declined to comment on this but did not that the low-root manufacturing efforts Compan had applied to Aero "can be spread over other

Puterson said Companyments Acrota be its best-selling portable this year and that it expects in he able to most the demand

Compag acknowledged that most corporate users are unlikely in nick the base model system, with its limited 85M-byte hard drive

#### Is the PC software industry laying DOS to rest? Dy Michael Virgad "The effect of OLE and other technol-

The PC coffware industry appears to be

ine in San Jose Calif

lining an to put the final nails in the DOS. coffin as major suppliers begin to downgrade the relative importance of DOS as a platform for new application develop-As Windows expands its domina the PC Industry both WordPerfect Corp. and Storiand International Inc. are refeentine DOS to secondary status behind

future Windows, Marintosh and Unix desudanment more And Latrie Develors ment Corp. said it is currently evaluating what course its future commitments in DOG will take "DOS is dead. How DOS and hate Win-

down as it exists today but the reality is that all one new application destronment work is being done in Windows and OS 7" said Book Blanco director of intion systems at Garber Travel Servione in Boston

in general, IS managers report that ing so makes it easier and less costly to poort end users. Blanco, for example. said his staff anands considerably less time training end users how to run appliestions on Windows and OS/2 because of their graphical user interfaces

Puehing vendors away from DOS is the fact that most new applications will take advantage of the latest object-oriented technologies for graphical environments such as Microsoft's Object Linking and Embedding (OLE) 2.0 interface ar the OpenDoc specification being driven by IBM and Apple Computer, inc.

orion is that they shouth a termendous and of annuance from the develop are so they have to form on the pintforms that support these technologies. said Chris LeToen as industry analyst at Computer Intelligence Services in Service Clara Calif.

Transitional ported Moreover with Windows analysis cales for containing states of DOS applications, most corporations will complete

their transitions from DOS to Windows during the next year As a result, industry analysts said the timing is right for major coffeens readow to back

away from DOS develop-This is the way the week! is online There are so many new platforms that vendors have to develop for, so they have to start dropping some of the older technologies

noted Carter J. Luscher, an industry analyst at Gartner Group Inc in Stamford Leorber noted that while there are tens of millions of PCs-running DOS, most of

those PCs are older lated Corp. 80296 and 90386 sys tems that are not really capable of run nior the latest memory, and disk-inten-

sive application upgrades. Meanwhile, more than 40 million units

much faster clip, developers prefer to foone their efforts on Windows rather than DOS Luscher said

WordDurfact for example will form on point release unstrades for DOS appli entions but has not completely ruled out doing any more major upgrades for DOS At the commetime the firm noted that DOG pse today is focused mainly on older 285ciaes AT systems that are not really enpublic of running large applications such as WordPerfect 6.0, which typically requires about 6M bytes of memory

Deers meanwhile said they hope WordPerfeet will apply more of its recourses to Windows "Their decision on DOS will have no impact on us. We're already an all Windows shop, But hopefulby it will free up more of their the compact to make Word Parfeet for Windows a leaper meaner product." Norm Weiner, chief informs tion officer at Duane, Morris å Heckscher, a Philadelphia

law firm And Lotus plans to bring its t-2-3 spreadsbeet offering for DOS into syne with its Windows 40 offering in the first balf of this year. But all its other major products, ex-

ceps CC:Mail for DOS, are focused on graphical environments. Following Release 4 of 1-2-3 for DOS, Lotus plans to of Windows are already installed. And for DOS will be unid Jeff Anderholm di-

meter of marketing for appenduhents

A Borland spokesman, meanwhile sold there will be no more significant upmades to the DOS terraions of its Quattre Pro spreadsheet and Paradox detabase The company plans in release an upgrade for dBase for both DOS and Winown in the second quarter, but from these it will evaluate its between plans for ditter for DOG

velopers dread 32-bit OLE repetitor. See story page 42.

#### Correction

tions, the fourth-quarter financial phart in the Jan 24 issue contained numerous errors. The chart incorrectly listed Compan Computer Corp 's year-end results instead of quarterly figures. For the quarter, Compan's revenue was \$2.2 httlian up 55% from the same period a year are income for the puarter was \$151 million, up 69% from last year's corresponding quarter. Unisys Corp posted revenue of \$2.1 billion in the fourth quarter down 7.4% from the corresponding over tera year ago. Income for the quarter was \$118 billion, down 18% from last year's corresponding quarter. Comdisco, Inc.'s net income dropped 46% to \$21 million in the fourth quarter following the adoption of new accounting rules.

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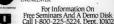
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#### Large DEC users opt for NT on Pentium servers

Ry Crain Stedman

Digital Equipment Corn's figured expectation that Microsoft Corn's Windows NT smold blossom into high-end deskton operating system has left it trying to play catch to make the comment of the party control who are deciding between like Corp. piatforms and Distal's Al-

processor superserver in the spring in an effort to place Alpha on more nous! featles with fee lium systems But its initial em phasis on a single-processor PCclass marbine has allowed intel-based vendors to min an early adventage with sustament into natural in him

"Win're string to have to look" at Alaba NT so the product line or Alpha is as the product the expresident of applied technology at The Chase Manhattan Rank NA in New York. "But once you set a path. you really have to think long and hard shout whether and who you would change it. Change is not al-----

Chase Manhattan tested NT on both Dietra's DECre AXP 150 and intel platforms last year fCW. May 10 1993) Heavy tests continue on Intel machines from IRM Compan Computer Corp. and AT&T Global Information Solutions (formark NCR Corp.), but the bank is "not actively pursuing the Alpha tests

emanos advantama The in one for no ishow many hours do no want to have in-house " he noted No bearily standards drives and (Alpha) is not part of our standonde not right non

lated will also be the primary NT server platform at Bankers Treet Co., according to Sholom Bryski managing director of client/server neering, "We'll leverage both but (Aloha systems) are going to

he on the high and where we need a fact uninposcope " Brooki caid Durital will remain a 'very significant partner in our NT court but meen becomes of its most on both object and clustering soft. many face story below) than the Alpha hardware itself he said

No retional our tomor would sto none a PISC marking if there are got what they need on an intel how "said Dennis Schneides need ident of CorPoint Marketing Inc. a shne, N.H., consultancy, With the AXP (50 "skewed toward the low and " users have had little ros. con to m with Alaba be said The AXP 150 is rated at about 80%. Special, compared with 64.5Spe-

rint on the 65-MHz Pentium "Digital's whole strategy has been very much Windows NT as a desktop operating system," added Lynn Base a Gartner Grown inc anabut in Stamford Conn "I thick that's why they've been playing down NT lately They last don't have anything to sell there yet." This anomach conflicts with Migrosoft's nitch that NT is a server

Dietal lost strough last fell when it depend plans to inpropped plans to informance NT servers hand on the Brink. cont. Comment to

Added to make instead fore lower-cost Alpha ohio dee this one (CW Oct. 18, 1993) Michel Gambler Michell Gamber,

of Dietral anticontrol that the full st bugger, reserves some inches works, starting with the out-d system due out in the unring He acknowledged however that Digital will have to deal with the obstacle of Intel's installed base

We do understand that if you you're going to scrutingge the assue of many to Alpha more carefully Combine and He added that Dim. tal will point to its service and supnort combilities as one way to avoid being viewed "strictly as a Non-supplied

Shell Oil Co's refiners in Marti pez. Calif. is one customer that chose the AYP 150 over a dual new course Protion system last fall Mark Thomson a systems analysi at the refiners said the AXP 150 costs 75% less but added that the Protium murbice ran "slightly factor " More formal Doction tooling is planned for the near future. We're bappy with Digital, but one of the things I like about NT is

Age CPU pontoman

Challed branch in Circular file

muniprocessing

Limited apparation

Not rejected to

i iwited appli

Digital plans to focus Ps Aleba INT marketin on compute-intensive mediantes character other by mand sustant ships in the spring and

will relegate file serving to the harkenund accepti to marketing monege Michel Cambier, The company is pulling toerther packaged systems for datab and communications vine, with softwo and senious huilt in embler sald. Digital has decided that

Alpha's throughout capebilities make it more appropriate as an than as a file server, by

the shades to down the the choice it flives at in naroware, rnom-POR PERO, IN P. ACHOU a race to come upwara chine which is fine celebra, w

to me. so compete to contin so expects to eventuany ony rapus-onsen for its operations that now run on Digital hardware said Pich Lansing vice presideat of the advanced technologica mounat the unit But Chemionl Book Georgemy in atready implementing intol-based eve ing inter-based sys-

for Diritel to make Alwho a weekly platform he added Digital is "getting us the pieces that we mad but it's obviously taking longer than expected and inner than Pentium" system was done I anging said Multiprocessing is one big missing piece, along with a lack of tools for moving VAY

applications to allegations as NT in approximate to extend and Digital's slow start to also know ing it from taking full advantage of its early entry into the NT market compared with other RISC vendors analysts noted Combier said Digital still boxes to grab market share before NT becomes available on other RISC architectures. such as PowerPC and potentially

Hewlett-Packerd Co 's PA-RISC Ironically, a silver lining for Digital may be NT's slower-than-expected adoption rate, "The NT isunch is taking such a glocial turn short table to DECharatter of Caband der said "You can't telly about an NT norm for quite a while. Alpha still has a lot of petential if they market it right."

heat with Unix operating systems. "Even as a first step, that would still be a pretty appressive schedule" for NT she noted

Sholom Bryski, managing director of client/ server engineering at Bankers Trust Co. In New York said clastering is one of the key technolories needed in NT before it will be truly viable as a server. "Our applications are mission-critical kinds of things, so clustering is very important" he said.

However, clustering is less critical to Rich Lansing, vice president of the advanced techpolories group at Chemical Rank George in New York. "It's not on our list as a reason for deciding or not deciding to do things." Lansing Sale

Digital's approach will support load balancing and failover between NT servers, plus managreement of applications that are distributed across multiple servers, sources indicated. The more complete cluster management supported under OpenVMS is not as necessary with NT because of its higher level of integrated manage ment capabilities, the sources added.

Digital Equipment Corp. plans in the second half of this year to thin add-on electering software for Microsoft Corp.'s Windows NT one-ex-Ing system. The software will run on any multicessor NT server, including Digital's Alpha AXP machines and ones based on latel Corp

The multiplatfarm support would allow us ers to create mixed clusters or use the Digital siaftware in intel-only installations, according to analysts. Such openness could reduce Digi tal's ability to directly use the clustering softwere as a lover to sell Alpha machines they

"Digital has to treat this as a generic tech nology," said Dennis Schneider, president of OnPoint Marketing, Inc., a consulting firm in Nachna N H

He added, though, that the clustering prod-

Digital readies clustering software for NT Take it or leave it The Windows NT

clustering software will be implemented as an optional made or other than as an interral nam of the operating ovitien, in coerrasi

Niebal holib directly into Onset/MS The

Windows NT product is not expected to require any special

Nantuara indulin

nung internally and may be ready to start beta at Digital. The software may also be demon

closely at Alpha

A nected true of the electerises necknote in rese. testing during the spring, said Dennis Saloky, manager of Windows NT marketing programs strated at Consdex/Spring St in May be added Customer shipments are targeted to start "toward the end of the year

net could give Directal some technical woods

and prompt customers to at least took more

How good a move is it? Saloky described the clustering espabilities that will be provided in the first reiense as "a

good first sten," but said they are not likely to match the functionality that Digital's VMS clus-

Lynn Berg, an analyst at Gartner Group, Inc. In Stamford, Copp., said a late 1994 rollowi could pull Windows NT into a clustering dead

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ORACLE

#### Novelty is fleeting for PC's powers

ware. Embition in computer technology accelerates year years. Evolution in computer secundary accelerates ye to year. One form of the computer seems to dissorve into another at a dizzying speed. At this year's Demo '94 show in Indian While Calif the PC was more hing before our oyes into a multitude of new shapes. Refere the end of the ndo, the deskip computer is likely to absorb the telephone. missochons atdoors were and few machine internating their franc

tions and addingney ones. The desirion hound PC is about to the future is just around the corner Tuke Intel's new software an plication, ProShare, for example (see related story, name 47). For \$20.00 to the series and \$20 stores to price you are acceptance on the series of

and the precess of notices prace, you can parcesse an invest pare.

that allows two people using PCs equipped with 9.6K bit/sec. moderns to call up and work on the same document atmittaneously. Second ProShare treats the document as an object and has an

it each worker can go lo any

page of the document and make comments on cummed changes. At the end of the collaboration both afforts are recaptured as one does

If the system is equipped with videocomores and micombones (the \$2 490 cm ciopioseo (me accornel vid excenterencing with two purties able to see and talk to such at heart-life there

station to a 1040n month



Charles Rahrock

The processor needed to support such a system is the 33-MHz Intel 496DX2. If ProShare or systems like it succeed, they will increase the demand for 1486-based machines, a thought that may

have occurred to fatel when it brought out its first software appli-Intel CED Andy Grown collect into the Down 'Stickers via Pro-Share and that projected onto a big screen. There was some annoving trailing off of words, but the video quality was good for 15 frame/see. ProShare does require an ISDN line for video, and ISDN is canable of transmitting color but Grove was drossed in black gray and white in an all-white room, in other words, the video was

At a more paractrian level Windows unaligations in a new rest rmst can move the computer off the desktop and into more physical work settings. You may soon encounter an auto adjuster walking around your ear with a pen pad screen filled with an automobile decomposed into its parts. The picture is your make and odel, and you get to see it exploded into its co

pad because you have just been in a collision. The adjuster uses his nen to touch the equivalent of your crumpled fender and inner pagel assembly. The parts with their prices go ag a list, which the pen pad adds up. The adjuster brings up a virtual entrulator, touching numbers to finish some calculations. Then he brings a virtual keyboard to the screen to add a comment

This application by Automatic Data Processing in Hoffman Exites. III., captures data on a Compaq Concerto IBM illustrated continuous speech recomition with a speaker

who had been coached to try to sound natural while pausing betamen each word. As he delivered his helting regitation, the words were transisted with a high degree of accuracy into text on a screen, processed by a PowerPC. This system analyzes the sounds it bears in two or three word sets, whose context enables the system to distinguish, for example, whether "to," "too" or "two" is correct. Speaker-independent voice recognition (with 1,000-word vorabularies) is not just around the corner ft's here

The neer interface is cottler friendlier the PC is changing share And what is novel in 1994 will no doubt look outmoded 12 months

ork is Characters world's technical editor. His NC t Mail address is 375-2737

#### Novell works out VLM bugs, but implementation woes remain

Linear of Newall inc 's modular client shall so most it from of all but a four of the burn that in fosted its predecessors. However, these LAN a pregentages. However, these Lock total I made blo Made to (MI M) at its still one of that companie secure (vint) tit is said one of the most daunting taxes involved in a

NY Maintain de la contraction most allow IX clients to support some nifty but memory-intensive NetWare services such as NetWare Directory Service (NDS), TCP/IP acsecond to Vint Windows and Dankert Burnt

The expanded choices offered by VLMs tevy a his reion in implementation handes 3-AN ada nig price in imprementation nassaes, a.c. no-ministrators said. "Configuring VLMs is a royal nem in the butt " said John Short-II Nerther 4.x project leader at Air Capada in Montreal

The good old days

Configuring PCs was comparatively sample with the older "monolithic" DOS shell which asserted the came not of functions for all oil. ents explained Lisa Laine network exstems analyst at Markill Community in Montreal With VI.Ms. the LAN administrator or user must determine which once are to be leaded for any effe en client - a long, drawn-out process when a romonay has hundreds or thousands of PCs.

We have 1 200 desistants we think footfuture ing their VI Mel will take a couple of months said Robin McCubbin sensor actwork plenning analyst at Tomosto-hazard National Geograph Co. Laung as in even worse shape: McGill Univer-

sity has about 4 000 clients and none of them have standardized moment and software con-Emertions observed

Novell plans with the next VLM release to provide "better configuration capabilities" such as automation features that will enable such as antometion features that will enable Joff Turner a Novell product line manager.

Trefay I AN administratory can not up one VLM configuration file that all users can implement Turner said However this misks only when all PCs are configured the same Moreover management to prother VI M piece that needs work meets eaid. The current offer.

ing saves memory by sympting modules in and out as needed and by loading modules into upnor memory whenever not either Hammer Martin Benton, on administratoral Donald Supply & Partners said he has found that VLMs' vaunted momory management does

not more if the PC is already using a memory optimizer, which tends to fully utilize upper memory He said client applications took a significant performance hit from VI Me. "That has turned me completely off" VLMs. Benton add-Still. Laing summed up what seems to be a

primerily positive percention of VIM 1.1 as a "I had a list of showstoppers that would pre-

squeeze. See story on page 53.

vent me (from) installing NetWare 4.01. Non VI Manchiome are off that list "obe said Bufffing wersless of some databases are a tight

#### AppWare adds bridge platforms

Novell, Inc. last week provided further dates and details on how its Anolliero Rundation analication development environment will bridge discrete ellent/server platforms. One key addition will be Universal Directory Services (ITIS) which will transportative link applications built with App-Ware to network resources via a

broad rungs of directory systems. Novelleeld The initial remains of ITDS which will also with the first commercial release of Anti-Wart in Max will for the first time allow applications to have transparent access to resources across the hinders based directories of NetWare 2 v and 3.x servers and NetWare 4.01's stobal di-

rectors: Nosell said

The first release of AppWare will also support Network Information System and Domain Naming Service, directory and naming protocois for Sup Microsystems, inc.'s Open Network Computing environment, extending AppWarebased analications late the Linix sweld. Ann. Ware is likely to support Lotus Development Corp.'s Vendor Independent Messaging protocol, Apple Computez, Inc.'s Open Collaborative Environment, Banyan Systems, Inc.'s Vines

Gradual release The short-teem schedule for AnniWare summort of selected operation systems and platforms is as follows Second quarter | Third quarter version notwork software and the Ones Software Foun-

dation's Distributed Computing Environment based on customer demand. Noveli spokesmen anid They declined to give dates

"If this is anything like what Banyan is doing hey've unbundled network services from the notwork operating system so that you can start to mix and match," said Bob Flanama, senior analyst at WorkGroup Technologies, Inc., a Hampton, N.B.-based consulting firm.

Also last week, Novell released dates for the delivery of AppWare on a series of platforms (see chart) and support for object environ-ments such as Microsoft Corp.'s Component Object Model using a Component Service Interface to identify object model drivers [CW, Jan.

well is late with its imaging tool kit. See story on

#### Network operating systems

#### NetWare 4.01 migration tools on horizon

The absence of adequate data backup and motivary services is one extra har doe that I AN administration would not er not assume as they undertake the diffirst and have done reignetion to Navell

In an industrial Users are finally beginning to see their hashes toroiden come and with V-tillian 4.01-compliant products. Indeed, one Boston-hannel business just got its Not Ware 4.01 version from Conner Perinher. als Inc after waiting impatiently through a cories of deless according to turough a series or ucinys, acc

#### Taking a big step

Migrating to NetWare 4.01 "is a highite to chew on." said a Chevenne Systems. Inc snokesman particularly because for

many condete it requires connecting No. vell's Storney Management Service (CMC) Novall proposed SMS

some years ago as a standard for interfacing of non-timental

serment systems with a notontially hroad range of file database storage existence

Dut nomdon support for the

nuntound has

been slow in

coming, pri-

marily because

it propert a ma

ion normite of

existing soft-

ware, industry

Organi management sonder that are

NetWare A.os include Palindrome Corp. Cheurene Systems Sountain Network Salutions Conner Peripherals, Inc

Submer Corn and Emerald stems, according

sources said to Noveli Hommon No. vell gave SMS a big boost to-

ward standards status hy making it a necessisists for fall-function backup of NetWare 4.01. In addition, Novell promised that third-party applications, nnee written to SMS, would be shielded from changes made in all future NetWare re-

#### A backup problem One piece missing from SMS and from

NetWare 4.01 starage management is the ability to back up pieces of a NetWare Directory Services (NDS) directory struc-

"Currently, you must back up the whole NDS tree and therefore have to restore the while tree," said Lisa Laing, a network systems analyst at McGill University in Montreal. "If one of the tree hranches is corrupt, you should be able to restore just that section and not have to do a complete NDS restore

Novell plans within the pext month or twe to update SMS to support the back-

#### ing up of suomrectories, a company vendor planning to implement the undat-

At least 10 major vendors now sunnert All triest 10 major vendors now support.
SMS and NotWhen 4 Bt Novell and Other mount and thending developments in-

#### aCharacter manually delicement tractions Vorsion 5 fit which is said to back smand

version 3.01, which is said in be +Intel and Newell are working on an SMS. hand product that will back up and an store Microsoft Corp 's Windows NT files from a NetWare 4.01 server.

From a NetWare 4.01 server. \*mountain Setwork Solutions recently the immunity that users can upgrade it uses by SMS committent " PileSafe for Windows Process Notlines I and able Madule (NI M) for \$149 through Aneil 90

street enrough April 30. In Corn 's storoge remembers product will ship pext month. Legate currently has a client-haued product to back up NDS from NotWork 3 11

Is the difference between a low-cost modem and a cheap one

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the new UDS FasTalk II is today's outs ware. With full V.32 bis and V.42 bis isnce and FAX capability, is a top performer, even over

MOTOROLA UDS

#### News Shorts

#### Aetna nares staff

ten Life & Countity Co. has announced plans to lay off another 4 000 employees, its luding £ 000 of its tay on another 4,000 employees, including 4,000 or to corporate staff and information technology workers 7 000 employees nationwide since 1990, has not yet 7,800 employees nationwise succ 1800, has not yet ore will be used or which divisions will be hardest but

#### Apple ships most PCs in '93

For the second year in a row Apple Computer has edged out IBM as the top PC supplier in the U.S. neposting to Datappest lac. statistics released lact week. The roos between the two rivals was a photo Week, The race between the two rivals was a possiover the of the machines each of the communies sold best year. Apple shipped 2,086 million PCs for a 14 th market share compared with ISM's 2.053 million or 13.9% market share Company piaced third with 1.5

#### M enhances CICS management

IRM lost week neuraged a systems management ckage designed to help large mainframe shops administer multiple CKS regions from a single maint of control CicsPloy System ManagerESA, available next month, will enable users to get around the arduour task of administering each CICS region Independently IBM plans to roll out versions of CICSPicy SM/ESA with an OS/2 graphical neer interface. links with NetView and the ability to simultaneously manauto CICS OS/2 and CICS/VSE regions, according to Jim Gideon an IRM senior program administrator of Imposeding processing systems in Atlanta.

#### Tivoli to expand beyond Unix

Tivoli Systems, Inc., which has an object-oriented framework that monitors Unix systems last week said it will extend the reach of its applications to Novell, Inc.'s NetWare LANs by next month and to lowing neers to install object-oriented software "agenta" on PCa that require only 6K bytes of memory Those aments will monitor PCs from a central Treoli Management Environment framework running on a Unix or NetWare file server. The software amount are riced at \$100 each per PC supported. Copies of Trivolly Courier 1.6, an enhanced version of a Unix-based software distribution utility that is priced at \$2,600, will he available post month for Net Ware servers

#### Banyan to adopt user-based pricing

Banyan Systems, Inc. announced that it will revamo prieing and packaging for its Vines network operating system and enterprise zetworking services for Unix product lines to a user-based model. This will allow customers to pay for services and functions according to the number of users per server. Vines will be priced from \$2 995 for 10 neers to \$14,995 for 250 neers.

RT TAKES Informix Software, Inc. and Microsoft Corp. last week unveiled a bundle of informix's lowend SE database with Windows NT to be jointly marketed by the firms ... Spectrum Information Tech-nologies, Inc., which made a spinsh when it hired John Scalley as its chief executive officer, is now facing a broadened shareholders' lawreit ... A Delaware court has upheld Computer Associates Interna-tional, Inc.'s right to continue its inwent against Orlando, Fla.-based Newtrend Group. CA seeks termination of the firms' joint venture and the return of its inforcint banking software division, which CA acquired from Uccel Corp. in 1987

#### Summatrical multinencessing

#### IBM to jump-start RS/6000 with SMP

Dr. Sann S. Bormon

INV. Averaged proprocessor-based RS-None line mili and a communical multiprocessing (SMP) Propriwith get a symmetrical multiprocessing (ASE) rower

The many will belt IBM \$5,0000 many more evial. ing their server applications to more newerful detabases commen

tradesic servers. planer to introduce an SMP machine because of time pager to introduce an Sur inscrine occasio of this bad to wait for its Powers obline to start abundant lest fall before it fielded SMP ma-

with Groupe Bull for two vestrs to come up with SMP designs for its DecompOC based machines undestra manus said Anabute said they expect IBM's SMP versings will be appointed by (RM everetimes stepped

about of passiding product specifications but they did . St. or show Charles were bloom are so the way and that then will be combined with clus to a configurations to boost highwood performance Pur-

thermore they eaid the Preparty; 601, 604 and 620 thermore, they said the rewerre out, out and our chips become available. The PowerY 80t started shipping jast fall Paul McGuckin, a Unix analyst at Gartner Group. Inc. said he expects IBM to appointer a four proces-

Hamilton Backand

sor SMP system based on the PowerPC 601 chin and an eight-processor "shared-memory cluster" that will have an enhanced version of the Pewer2 chin set The Power? chin was announced last Sentember for 1934 Discussion Model 900s and the IRM SP/I Unity parts

#### Just in the nick of time

The SMP boost cannot come too soon for some sites "It's definitely comething up'd like to offer our users If they want to soup up their systems," said Larry Washington, vice president of Continental Health Care Systems, Inc., a medical systems value-added resoller in Overland Park, Kan, "As their applications grow, they're looking for more power.

Continental Health uses a two-machine RS/8000 cluster to support its own multigigabyte call-tracking database for Wood soors Washington told

The idea of upgrading to SMP machines appeals to some longtime RS/6000 users. "We would have a relatively inexpensive way to buy another machine," said David Truch, senior technical specialist ai BP Exploration Alaska, Inc. He said there are about 60 RS/8000s at his site and an equal number at overseas rites. "We could use the same monitor and rabling but we could get the power of another machine," be said Compute-intensive evophysical processing and database processing would benefit the most, he added, but he wadts to see application-vendor support for SMP hefore having SMP RS/8000s.

IBM has paid a price for delaying the introduction of SMP house, particularly at sites that are downsizing applications from IBM mainframes, said Thomas Kucharvy, president of Summit Strategies, Inc. in Boston "The IRM RS/9000 may not have been the custom-

or's third choice but it was often IRM's third choice ? V-shows and addingthat the profitable IRM AS/400

muchany said, adding that the products that A SMP machines will allow the IRM RS/0000 to how lergy relational databases by handling multiple surger remodule databases by namifing multiple take Morrell manager of nothing research of Inter-

national Data Corn's Advanced Operating Fovironmanta Service in Framinghest Man ents service in runningnum, muss. will have to be modified to support SMP. However Mor-

was nave some modificate to support some clowerer, Mortake some time to optimize all and a detabase applies tions to take full advantage

of the new handware "They'll have the ISMPI medical this man but that proport than year, but tons moresn't mean it is easie very takes were to tune a week. net like that," The AIX onerating system will have to he modified to support high-performance multi-

the predict to the headled by multiple processors, be ex-SMP versions of IBM's Univ porketations would

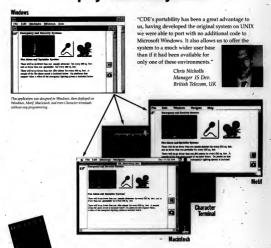
vield only about 30% more promper with a second RISC processor, said Dominic Dischatti director of workstation research at Dista-

sucest Inc. in San Jose, Calif. That is because most user requests - such as painting images on a workstation — are sent one by one to the RISC processor. he anid But efficient SMP servers can get pearly 80% more power by adding a second processor, said Omri Section president of Hom International, Inc. in Los Alton Calif.

Executed erabs early links SMP has See story nage 60.

#### Other boosts

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#### I.AN mail ware

CONTROL TO EROM COVER 1

Sharmwould like to see several thousand Saarp would inte to see so

Berk In one LAN server. nication Super (LCS), which is an extension of Notes, and Microsoft's EMN are intended to fiv that problem. They should also route messages between their cli-

annual fed

Town Base

6-84---

amen different

estinates Fault networks and their ent/server E-mail networks and unit Lotus is holding to its picht, to 19. Lottes is mosting to its eight to its

month time frame for derivering U.S. Mior early June, though analysis and bets tosters predicted into fall of the continue Both have ness and cons. observers mid Missourd's approach encours to said. Microsott's approach appears to revisite stronger management because of its alone time to NT Advanced Server. nd its close ties to N1 Advanced Server, Description Constructed Community Boundary atricia Seyboad Group in Boston. ESES also appears to provide beach

development notestial. However it is limited to the Windows NT platform and may be one wandows rai-tune connections.

better for environments that are linked better for environments that need to run clients and server, across multiple plat forms, its groupstare development tools are built-in but somewhat limited, ac----FMS which was delivered to its first 50

beta sites a few weeks ago, uses Micro-Deta sines a sew weeks ago, unce sireto manage store that can book into SOI databases according to sources close to Microsoft That is more perceptial than the Notes flet file detabase which does

not allow relational searches PMS also ness remote procedure call CONTROL STATE OF THE PROPERTY three jeedings to provine synamic vismessaging network. For instance a ner-



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faces are monitor will display how many users are lowed on to a remote server. Also the PDC's are used to send real-time undates between EMS servers accordingth Bill Sormein a Microsoft messaging

product manager Moreover the RPC canability means that week do not have to have both one. ies of the database communicating with each other as they do in Notes Marshak said For users who want timely undates that could help control network traffic by connecting servers only when there is information to exchange. The Notes method requires frequently scheduled repli-

cation intervals. "If you are building real-time-oriented applications, replication technology can have serious scaling problems, especially when they have to occur over 50 to 100 servers," agreed Don Price, a technolo-

gist at Tenseo, Inc. in Houston Microsoft said EMS will include X.400 transport and X 500 directory services. However, several EMS beta testers, who wished to remain unidentified said thes are concerned with X.400 and X.500 supnort in the beta version.

in response, Sornsin pron when the first release of EMS ships it will include 1988 X 400 transports that Microsoft will certify to aperate over TCP/IP Open Systems Interconnect and X 25 protocol stacks. The initial EMS release will require a third-party directory exchange agent to exchange information with X500 directories. That agent may ship with EMS. Sornsin said. Meanwhile Lotus is expected to revest

next month its plans for a layer of software in LCS that will automatically call cific transports, such as native CC Mall, native Notes or X,460, depending upon the needs of the specific events, according to sources. Senior editor Elisabeth Horsoitt

contributed to this report

rare opens gateway to standards link. See story page 59.

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confirmed it by unequivocally placing it first in the
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MICRO FOCUS

#### IRM tilts toward PowerPC

Drone rights to build Pontium and signaling

#### Ou Minhaul Ditromould

IDM's decision but week to endo its might tipm's decision that week to eeco its right to numer must corp. a remaining coup at more than an investment occursor by the the standard that the former

vancing its DownsOC ambitostum "It is a sisted that they're shifting emphasis to Pow-

orPC but fit isl. also a short-term decision not to invest additions! pacity to build the Pentium." ated Daniel Florken an analysi at Rob ertson Stenben & Co. in San Francisco.

Most observers agreed with the official and concreting that and million was the main issue for IRM which would have but to be the built of millions of dol lars to make Pentium Intel ing more volume from the

Kleeken actimated that IDM's application unbrane have typically ranged from 1 million to 2 million units that the deliber fills some not medicing Pontium and

duction "will not necessarily en to ProperPC" an IRM spokeswoman said, "It's not a matter of either/or. We will a matter of equipment, we will IRM has had the rights to holid intel

hips since the 80086, it did not build the 80386 and has made roughly 20% of the 1486s it uses, sources said.

Overall, the decision appears to entem/s6 line See stony page 71 hance the strategic importance of Pow-MacWindows seeds sown

orDC to IDM An official poor IDM who asked not to be named pointed out that IBM's decision to marry the Muliba chir developed by Valuida for with Drawall's is a strong indicator of where IRM's do.

Maliburia a maliferatio asisated abin scienced to bring the performance of a \$50,000 unadvatation to a

sub-\$3,000 PowerPC ICW IRW sefforts with Work TOW PERSONS AND MORE. the Downer C Come on the le

tel-based PS/2 IRM's direction is shore The resemble and BW 77 roller chip, designed to give the PS/2

a performance boost of unito Wife, will alno month with the Downson IRM had only manufacturing rights for Bestiam making its more loss risky as long as intel can deliver the

countity of chine it claims Still. Its emphasis on Power-Sub, in emphasis on rower TRM and its main systems partner, Apple Computer. Inc. are following divergent of males disco Annie is formed on bring. ing its installed base over to the PowerPC architecture

which does not insulm ann

portion the IBM specification for PowerPC ICW Senior correspondent James Data and senior editor Ed Scannett also

contributed to this report. SM considers PowerPC upgrade to older Sys-

### IBM PC Co. proffers minor PS/2 undates

If IRM DC Co. is pulling its best fool for. want with PS/2 efforts it needs to set waru with the court, it been to get one enighth moneting this moon and the

but weekly week my PC Co. essentially upgraded the prowork. The so-called new machines of tain the IDM-developed 495-CLCS is 25 T tills shad taken and blocks

hand drives of up to SdIM better for a have price of \$2,300, which is higher than the base price of today's low and model The products did not mollify

more PC Co contomore who not and that what they wantle want our now Models 26 and 27 which are delayed until at least early in the second opertor because of prob lowe with the unennounced RIC-32 intestrated controller chip [CW,

- ----"Minutill one " and product " onld Bruce Linker vice president of a large figancial services firm in New York and president of the Microssmoster Managers Association

It has been some 15 months since IBM significantly undated the PS/2 line though it did release the low-end Model 53 late last year The PC Co. continues to suffer significant backlogs in the PS/2 line in part because of component short name, in pairs occasio of composion salore chilecture (MCA) PC Co officials continue to mainte

will, then I can't imagine that [Microsoft

Chairman | Bill Cates and

pass up the opportunity to

But Microsoft officials

have vehemontly depled

that a native part of Win-

down 40 to PICC in in the

cards because a large per-

contam of the eneration

existen code is written in

lotel machine language for

performance reasons, mak-

ing it extremely difficult to

port it to either eletterms

system on that platform

with ValuePoint Using industruction

deed commonante chould improve avail shillty and lower costs on the PS/2 line This is unlikely to mean the exclusion of MCA, though David Andonian general manager of premium brands at the PC Co., denied recent reports that IBM is considering shandoning MCA

## with more industricated and come penia. Including some parts it will share

MANAGES SPEN MIN

swor development evels for their proj

"You are power going to see us go to

raduct refrashes three times a year like

inhafteint " said Street Cohon market-

IBM officials did promise a simificant

the tension in PSb Badels of and on

refersh to the PS/2 line later this year

ing manager for the PS/2.

not relieved linery have said reported

that they do not like the new homesoction

#### nock Letter" in Alemeda Calif, which covers the Macintosh industry. "If Pow erPC becomes a sucress, as I suspect it

#### CONTRATED FROM COVER I

before the chiament of Windows 40 it. self. Kerr said. An optimized version will be released following Windows 4.0

which is due out by year's end. While there are some drawbacks to ors, maers and analysis said a subset of users — especially Macintosh enthusiasts who also want to run Windown & Canolications - will benefit R should mean something to us since

we have a 50/50 ratio between Macs and PCs," said Mike Drips, a Tampo, Flabased Windows consultant working at a We live in a cross-platform world

There's no getting around that," said Robert Anderson, a senior analyst at A. O Smith Automotive Pandoute Co. in Mill Insignia's emulator may also hit a

nerve among vendors. Hardware makers have become more interested in having a version of Windows 4.0 on non-intel platforms in order to validate RISC ma chines for high-volume deakton wie

hankering is driven by Windown' popularity - Microsoft claims it is well past the 40 million mark - and the fact that Microsoff's ports. ble operating system. Windows NT, is positioned as a

The bardware vendors

high-end segme not as a high-volume seller Windown 4.0 meanwhile will be the first 32-bit, preemptive multitusking multithread ingversion of Microsoft's extremely popular desktop opbe the first version of Windows that does not require a separate version of DOS to

The real issue is whether we're going to have a native PowerPC version of I'Windown 4.01 " said Pieter Hart sook aditor of "The Hart

Time for chang in second months Apple has made customs shoul creating tighter interseerability links with Windows Associ PCs. N Comdes/Sall 'no for instance the company introduced a Marietech ableto nut both Windows and without amulation software. Apple also

to what we do more so then the current version of DOS and Windows. It's more like year when it began NT in that you tend to use on elling software for the erating system services rival Windows rather than hardware serrions "Korr said Access to the Windows 4.0

source code gives Insignin a bir ler up because it allows

manor areas such as graphics handling and other I/O motines

Source code access also means that ome emplation code that needs to be intermented on the fly can be precomplied to further decrease performance degra

dation inherent in system emulators whether Windows 4.0 nanabilities will help popularize Apple's PowerPC. "The argument in corporate accounts [against Apple] has been it just isn't a PC," said Frank Dzubeck, president of Communications Network Architects Inc. in Washington. "That is a com argument used by corporate purchasing agents against the Mac. But If they can

become more like a PC, they can begin to break that argument down But Microsoft has nothing to lose "Idon't have a problem with that," said Bob Kruger, Microsoft director of sys iems marketing and standards. But "I

atill think most of the RISC market Is a consthoot The market is still primarily

Chicago expected to boost "Plug and Play."

Statibuted environments are laborated as the laborated as

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CHILDrate Seter (myse)

#### HEC

#### CONTINUED EROM COVER I

nected to mainframes over an SNA net-

UPC atom to have 90 has a short and 500 workstations and inc he was 's and for mostermen coming and and mosting an customer service and underwriting apand the rest of the branches will be a dried in 1995. The project will also excent core back office business systems such enting and human reco

The hardware and networking is shall ed to be fully deployed by the end of 1995; and the country deproyed by the country does ing the next three years. As the citent server project proceeds, HFC will re-ensincer all of its mainframe applications to min more efficiently on the coop to be less-taxed host (see story at right)

#### Mainframe limits One impetus for this project was that

mainframe computing at HFC bad ctart. ed "running into walls and particularly

when it came to providing South to cause so providing now according to David Barany vice president and chief information officer of HFC parent Household International Inc "The business is such man. How do me. solve the single-point-ofcontact question " Barrary said. He added that the integrated nianned for the Vision System will let customers call any of HEC's branch officer to set their questions answered

Customer service person nel will have on-demand access from their worksto. tions to enstoner records and documents if for example, a customer needs to see a copy of a loan application.

#### Re-engineering the mainframe

on Imaging subsystem will

ship it to the agent in min-

utes. Today requesting a

over of that name down-

ment takes two or three

Barany, who became CIO

Sit years are is mick to say

the project was driven by

the project was direct by

then by an expectation of

cost savines. "It turns out

the costs of supplying the

felient/server) infrastruc-

ture exceeds anything my

had in the mainframe emi-

in fact about \$20 million

tions and an increased boad

ronment," he said.

nature of the new system, it will fee strong rentralized control from 18. "Many commanies servered un itheir elient/server offertel by nutting things and for many and abdirating their semonathility to run if "be said Network management tools, am

other technologies have embed suff ciently to allow iS to roll out a plan like this and make it cost-effective be said. "His could not have done this two weets ests "Resourcesid

#### The hardware rundown HPC's upgrade calls for replacing the

desistant permissis in 467 branches with about 5,000 Herwiett-Packard Co. RISChased workstations. The client ma-Rive 1994 million budget will chines, which will be couloned with hirthresolution monitors and will run a graphical user interface based on the count in the IS department. Open Software Foundation's Motif. will he connected across TCPSP networks to Baragy also emphasized Sun Microcontomo Inc. comune

that despite the distributed The network itself will be managed under a controlized network manumaterial MPC has made and but 1985

NetView/9900 and HIPs OpenView Centel investments for compu network in regulariest and coffee as will necessary for remarkly \$74 million of the \$94 million project HPC officials said

Although HET's 55 application of grammers are designing the overall Vision System erebitecture software yen don will build some of its pieces. Indeed MESC in terration the second are as about ric partners and is not identifying them The decision to use University to the The decision to use this way sections

also mute HEC's project on the leading edge according to industry observers "Sounds to me like they've decided Sounds to me like they've decided why invest in plain old PCa?" said Tube nob Williams a tochnology analyst at The Tower Grown in Wellesley Mass

#### Price advantage crosion

hatman DCs and muchatetions has me tinued to erode. "When you're looking at bulk discount. It's maybe \$2,500 to \$3,000 with auftuare for a workstation vs \$4 500 to \$1 700 for the PC "chassid Donadoni even supposted that para dovicelly HFC's slumrishness to outo mate its beneshes until now will help it

leapfrog competitors. The cordinat institutions to automate are almost always the most backward." she said "The ones that come in later tend to come out shead" because they have access to neger more flexible tech

nologies Sterba said his choice of RISC pro sors to replace HFC's 10-year-old IMS systems was strategic but that the choice of particular hardware wardors was not

We'll have our selection of vendors an innual review" he said adding that HFC will apply performance bench marks and a cost model when it makes tte freement vendor enlections "I'm treing to promote open systems."

the engineering the Workplace: Marketing See special supplement page 113

#### NetWare security .

#### Intruders stalk Internet accounts

NAMES CON

unate or sure

Ry Gory H. Anthes and James Daly The Computer Emergency Resp Team (CERT) at Carnegie-Mellon University late last week advised users to batten down the batches in the face of a rash of password thefts and other breaches of accurity discovered in Unixbased computers on the internet

"In the past week, CERT has observed a dramatic increase in reports of intruders monitoring network traffic," the U.S. Department of Defense-sponsored group said in an advisory sent Feb. 3 over the Internet, "Systems of some service providers have been compromised ... [and] intruders have captured access to information for tens of thousands of systems across the internet "

A spokesman for CFRT declined to identify commercations offered but The Washington Post reported Friday that Rice University in Honston had replaced 2,000 passwords and taken other safeguards after being hit by an intruder. Officials at Rice could not be reached for

CERT said intruders gain access to systems, install a "Troug horse" to raich nascwords and then install a "back door" to allow access tates. It said any amputer allowing severa for remote login, telnet or file transfer is at risk. It advised users at those sites to immediately change passwords for any network. accessed accounts and to disable the promiscuous network interface"

n/nit on vulnerable bosts. Systems

known to support the interface are Sun Microsystems, inc's SunOS 4x (Sun3 and Sunt architectures) and Solhourne Committee Inc. routeme "That clearly is not modenough," said Vinton Corf, provident of the internet Seciety in Reston. Vs., and senior vice pres ideot for data architecture at MCI Communications Corp. in Washington, "If the managed, can be obtained by promises.

ous monkering of LANs, then changing the password just postpones the nomihility someone will recenture it " Some form of password enervation is peeded. Steve Crocket, area director for sees rity on the internet Engineering Task Porce and a vice president at Treated Information Systems Inc. in Change

Md., said password interception is at the heart of the current internet security problem. "Challengy-response systems are the solution," he said. In one such system, the user carries a

eial calculator When he attempts to torinto a remote bost, a challenge comes back in the form of a number that the us. or enters into his calculator. That is turn properates a unique key that gives the neer access to the host system. A variation on that scheme progrates a key based on time and date so that old pairwords can not be reused. Software variations exist as well be said

changed from the chat line of the acadomic and research communities to the playground of the computationally hin security breaches have increased "We've seen a tremendous widening of the internet community in the past few years so these attacks are becoming very common," said Kevin Hemsley, a senior engineer at the Idaho National Roes neering Laboratory in Idaho Palls.

In recent years, as the interest has

don Corf talks about the leternet's future See interview page 121.

#### IS execs seek to reclaim technology

De Learning Married

You know that hand about of Wite Out that sticks to the paper?" asked John A

Muskutish provident of Endanted Claims Samison Oronn "To an account Claims Services Group. To an accounsensot more or Brook for the person for a IChasto III and How to reclaim their native forms -

technology and botton understand the language of management and users were topics on the line of 120 top computer topics on the ups of the top computer emetine Technology

Summit 'M heard poors populs and

EXECUTIVE

vendors try to make better come of house asked and and including client server imaging workflow and 32-bit onerating systems and annifestions

The count on enemand by the Society for Information Management (SIM) and Computersoorld simulad a reformation in the information systems community

and SIM Provident Robert M. Rubin "In the 1950s we almost shunned teel nology" said Rubin who is vice presidont of IS at EM Atoshom North America ine. "Today we need an IS leader who's as comfortable in the business suite as

in the applications suite Keening a delicate balance between flexibility and control was a common conference theme. So was the importange of standards and infrastructure Title has a management in it and I air out porting it, I consider it my turf," said David M. Carlson, senior vice president of corporate IS at Kmart Corp.

Another strong theme: Business first, Re-engineering the processes is the only way no our min the remains that client/server offers," said John Severson, information technology vice president at Trane Co.

Look before you jump ship

Desnite interest in cutting-edge araducts, attendees and panelists contioned against ahandoning proved technologies ton enickly "A blind lean into the deskton conment is not necessarily the right thing to do " said David A. Pensak a corporate technology adviser at Du Pont Co. in Wilmington, Del. "In some cases, you need to keen those mainframe dinocaura

Yet worksbie is not always adequat noted George Oliver, manager of information delivery technology at the Royal Bank of Canada. Deficiencies in DOS platforms led the \$164 hillion bank to adopt OS/2, he recalled "Developers were spending more time overcoming esoteric memory management than delivering business function," Oliver said of the move from DOS.

Several speakers noted that shifting to new systems while maintaining the old is messy business. "Re-engineering is the wrong word," said Joseph J. Poremba, Management Co The Massis Dr. Sen is continuing an imaging system rollout that could much 400 musicatations by year's end "In many cases, workflow year's eac. In many cases, worknow It was just put in and added on to was just put in and added on to. "damned if you do, damned if you don't"

GUPTA

mature of unproying new teenhology. Extry come " second Church Manager of etell unitaring engineer at Harris Corn's Advanced Technology Department, "Il you can't make rapid changes you are oming your information systems

Yet amid the frustrations were several engages and promising pilot pro-

more The state of Debassion for once tile used amorting technology for great pre, used straiging recursorogy for great. district as the investment of Confess attention in CIVESON, Wanter registers annual IV hadens into \$200 million month of business are conding to administrator Michael Owens

And a pilot re-coefficering and imag ing project rould pass the city of New York's Deposiment of Transportation Str million by helping tenricery locate 1 1 1 1 1 1 1 1



#### Client/Server projects go on ver without team-programming from Gupta.

..... me had deliverno can be an endess obore. Too his for one n client/server projects remove multiple developers, and ----marries a crost-clus, coestical DC destinament environment in comprehensive only a programming facilities

#### We make your group a ter SQL Windows provides version control offeck-in/check-out and

at management to unity the efforts of programmers. Endwere can help prototype screens, forms and reports through our sesy QuestWindow?" And our open, repository-based system can wethenge data with many CASE tools streamlining management of even the biggest clant/server applications.

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edule with the team productivity and sheer power of SQLWindo Cul 1/800-876-3287 ext. 105 fo your tree demo dek todey



#### News Shorts

#### lated Confrontile differences

latel Corp. and Cyrix Corp. agreed to drop part of their level actions against each other latel granted Craix a lineage for its '775 palent mending how Win-TIX & license for its loss passens regarding one was its natest infringement claims aminut Cariy Intel al no armed to new \$5 million to Curin and will now an other \$5 million if the company decides not to anneal or loses its pending appeal of a recent U.S. District Cabet dealers that does Conta materials within to pertain name of the "I'll nates! Ourly adverd to drop certain parts of the 338 patent. Cyrix agreed to d

#### Communications translation

SynOptics Communications, Inc. in Santa Clara, that translates data between 16M hitten Ethannel from transmission units between join outside. States and Mode (ATM) cells Called EtherCall the switch acts as a front end to SynOptics' LattinCell ATM switch to all low users to build networks consisting of Fthernet

#### Texas Litilities takes two partners

Tan l'allittes Co., which lair last year ou PC and LAN operations to IBM's interrated Systems Solutions Corp. (ISSC) subsidiary, last week said is has added Fleetronic Data Systems Corn. to its tech nology dunes card. The turn companies entered a four unes actionment callingtes FDE to provide mainfacture software development, maintenance and support. ISSC continues to manage some 4,200 PCs scattered in isolated networks ICW Nov 15, 19601

#### orland reshuffles deck chairs

Bortand International, Inc. has quietly reorganized name to review. Rob Dickerson said he will quit on friendly terms "within a couple of months" because be wants to run a small software firm, although no deals have been signed. Meanwhile. Regland renumed its client/server unit "Enterprise," which encome susses interbase programming languages and other levelopment tools. Paradox dRass and other needucts are now under a group called "Applications

#### Wireless fax from RadioMail

RadioMail Corp. in San Mateo, Calif. has added a wireless fax service to its two-way wireless messag ing petwork. Subscribers can send faxes from Radio Mail-equipped DOS- and Windows-based portables to any standard (ax machine, Fax addresses can be added to distribution lists, cover spects persona a confirmation report indicating the time and number of pages delivered sent to the senders. Domestic Ra Mail Fax Service costs 99 cents per page; interna onal faxes cost between 99 cents and \$4.99 per page. epending on destination.

ORT TAKES The rapidly changing executive suite at Chicago-based systems integrator Technology Solutions Co, has changed once again with the sopoint ment of John T. Kohler, 47, as president and chief on erating officer ... Start-up company Visioneer in Palo Alto, Calif., is shipping a \$499 desktop scanner and related software for scanning documents into electronic-mail of fax packages ... Merisel, Inc. compicted its purchase of Computerland Corp.'s fran-chises and distribution division... Genesis Systems, a subsidiary of Genesis Development Corn. in Wost Chester, Pa., last week announced that it acquired the rights to the Actor object development environment for Windows and other related develor ment tools from Symantee Corp.

#### Hub encroaches on router turf

Next-generation technology faster cheaner

Re-Standard P Kilori to

Inchesion became more obsesses last much as Cabintona Systems san week as Capterrog Systems next execution but ambitostute It markes bridging continued mitching functions at performeans books that englants said service teachs ritter or meet or surpass those

or aspected rousers

Cohletens's bob along with competing products already in products acready as Corn. and SymOntics desired the last for months has not only turned the heat up on routing sendors but alon constad a most deal of confusion

amond seems Bra mamala Chia com and SunOntice DUAN

strateries with hole benching output Cabletron's strategy is the opposite: It needes controlled habe with muters on the fringes providing wide area links. Also, in addition to the attributed cost Cabbelana said It is positioning the Mmacthe for pollanced backbook appli cations, which is the stomping ground of mater worders

Resed on a fact-market switch doveloped with LSI Logie Corp., the Aft - bet Menny Pilos bet bet a best width of tOChitises and terremits

up to 400 000 packet/sec. at a cost of roughly 10 cents per packet, according to Cabletron ICW Jun 3t1 In contrast high and routers from companies such as Wellfleet Comrations Inc and Clare Serlame inc. transmit between 100,000 and 200,000 packet/sec. at a cost of roughly \$1 per packet. Aware perhaps of the impact

made by these next-macration hohe Wellford and Clean are also lookingto add unitables conshitt ties into their products over the next year according to Sam Picture manager of telecommunica tions at Home Savings of America. in Irwindale, Calif.

Cisco forevernole recently our chased switching vendor Crescen do Communications, Inc. with this roal in mind, according to Larry Lang product manager for both. ead products at Cisco. Cabletron, meanwhile, de-

marred "We're not in the hassness of building a backbone moster."

and Conta Barrers abatemen and chief operating officer "We're in D. Dee between bot and motor the business of connecticity with couring functionality ming after county to most common protocols ' That's a bunch of rot?" said

Then Dell'Open a senior analyst at Determent Inc in Pass Inca Calif. They are definitely competing dimonths with Cines and Wallfood

Cableboo's Intermeted Nationals tech Heature the Manne

contactions from any idea the contact of a signature with the ATM

and all the bob sendons are notitioning themselves to go after the (wide-area) market

The new hubs "are definitely reaching a level of functionality that is beginning to compate directly with leading router vendoes" actual Valuatio Suban a process of Marie Course



NOT NOW BUT WILL Base: 50 Foetune 1,000 communes Inc. in Westport, Copp. "Where exactly couters will fit in the network will be a major battlefield over the

next year and no one knows see what the certooms will be Cisen said it did not see Itself competing with the hub vendors for the moment. "If Ithe Mmac Plus] is getting anywhere close to a router, it sounds like it is still inadequate."Languald

However, if they are aiming at the collapsed backbone, that's

where routers go, so we

Picker and the second in the literature is hard for us to figure out what it as nare for us to figure out what we did .... the Many Park beider souting conshilities was obviote the need to have routers to connect

his company's possibly 300 beauch affices and Others offices The Mmac.Plue will be the first and promotion has been offen dispost mark. of-switching canabili-

ties and cell comession among Ethernet Token Ring, Piber Distelboted Data Inton Condition Date Miles. .... Made (ATM) allemin treate to communic enterwith one enother case with one knowled ner and location and without having to change their cabling on adentes acres. The needed is due to shin in May and marks Phase 2 of Cable tron's founction Internated Motwood Ambiton ture plan which the near cuttined in 1907 (see

-best One possible demonide of Cabi tron's architecture is that modules for the Mmuo. Plus will not be back. ward-compatible with the company's existing Mmac hab family However, Cabletron plans to ship Mmac modules based on the fautnacked switch with the Messo Plan

Initially the hub will support IP IPY Digital Equipment Corp.'s DECnet and Apple Computer, inc.'s AppleTalk routing and un to 168 Ethernet and Token Ring ports and 28 FDDI ports for roughly \$500 per port. Cabletron said the bab will support t12 ATM ports — almost twice that of competing produets - by year's end when it ships an ATM module developed with partner Fore Systems, Inc.

interest in the ATM capabilities. mostly because of the ATM modules' later ship date We see Mmac-Plus as a poten-

tially excellent interim step that will conserve our bardware investment and provide a path to the future, which is ATM, said Pat Bond. network engineer at Duke Universitula Darham N.C. which is run. ning Ethernet over fiber-optic eahiting and migrating to an FDDI hackbone, "However, integrating all of the topologies is a phenomenal joh . . . It remains to be seen how successful they'tibe."

Cost takes backseat in router/hub rolfout. See story page co.

## Slice, Dice Or Drill.



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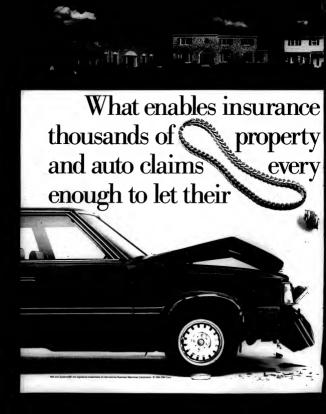
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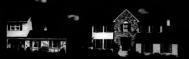
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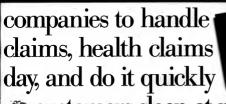
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customers sleep at night?

PCs, workstations and midrange computers, linked to

## Mainframes, what else?

Few businesses are as dependent on information as the insurance industry. If data isn't gathered, processed, managed and distributed quickly and efficiently, then neither are the customers' claims.

And if providing top service under normal circumstances is data-intensive, imagine the challenges when anything resembling a disaster strikes (like the California fires, for example, or Hurricane Andrew).

Understandably, insurance companies count on mainframes to give the rest of their computer networks the conrous power they need to perform this herculean task. By being linked to a mainframe, every PC and workstation has access to the voluminous amount of data they have to contend with day after day.

Like most information-intensive businesses,

The most mortaneor inclusive keep insurance industry knows that nothing can "serve" the rest of their computer networks "clients" to nearly the degree a mainframe can. And today's mainframes are more open than ever before to serving just about any kind of hardware and software.

Today, the success of more and more companies is tied to information. To the swift and reliable accessing, managing, distribution and protection of that information. And nothing can perform that task quite like a mainframe.

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The IBM System/390°

#### D&B Software to play manufacturing odds

In an effort to make up for a late start in the elient/server manufacturing market. Dun & Bradstreet Software and last money it will informate its forthcoming week it was integrate its forthcoming production planning and management applications with scop-do

.... bined newhort offering, together with the interest product orienting, together with the into its Manufacturing Stream applications, will help make up for the time-tomarket advantage it has coded to you. market advantage it has ceded to ven-Oments Com

Momente DAR Software unid the first

set of angle-ations will not ship wetil Joh and will not be intermeted with Industrial and will not be integrated with industrial Computer Corp 8 (ECC) manusacturing ton Some applications will not be ready come enterpression chipments start until 1995 or later the company added (see chart). Another issue is D&R Soft-(see chart). Abother Haue is take Son have which could drive many users com-

mitted to other relational databases Bobby Cameron, a former DAR Softman executive who left last man to become an analysi at Forester Research Inc in Combridge Mass, said "newhably 200 to 4000" of the full Menufacturing Commendation of the last standard that

"Their timing delays are such that it's not driver to be easy for years who need to an now to wait" for some of the promised functionality Cameron said Headd ad that the low missing piece for DAB continued at the start will be authority based aroduct costing which "is really the one SAP is leading with."

Peter Lones, director of manufactur individually marketing at DAR Software said the modules due out in July should provide about 75% of the canabilities in provide about 75% of the expandities in facturing software. "You can't nossibly delinerementhings) one time but I think you're going to find a lot of functionality



In the database area however D&R Software is offering limited support only Sybase's SOL Setver - in Manufacturing Stream and its other Smart-Stream client/server products. That may force englowers who use other detabas es to look elsewhere, analysts said.

One such user is Teledyne Allyac a Tolodyne Inc. unit in Mouroe, N.C. that produces metals and specialty steel. Teledwae Albae already uses ICC's software and was interacted in Manufacturing Stream, but the company is "very committed" to Oracle's database, said Steven Siegel, director of manufacturing systems at the operation

The combined D&B Software/ICC pffering "would save us a lot of integration effort, but we're trying to keep a pure underlying database," Siegel said. Teledyne Allvac wants to start moving this year from the custom mainframe planning software it now uses, "so it's on to Vendor B. I guess," he said.

Beta testing of the Manufacturing Stream applications is due to start in March, and ICC's software will become available from DAR Software on a stand alone basis at midvear. Lopes said.



## DEAR MR. PRESIDENT: According to

the Gartner Group, "Over half of all client/server projects fail, and 90% of them because the right systems management structure was not in place," Send your CIO to one of our free seminars and spare yourself ... the blues.

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plines that will allow also good, control to a 1886 of enterprise operations of a sign graph of olso tion — all without specific training on the plant time being controlled.

Please of Fudin, criestic,
or (Closs and took have senimar myoul area; We'll show him or her flows to meet the challenges of distributed system management—so chart server teck nology can be music to your ears And, if you're actually he begins a could be delighted to bring the senim, to you. We'll even bring on instruments. But you'd be tech return our part of the country of the

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COMPAQ

#### Cross-platform query tool on way

Comprate developers socking to mannon and control ad has meeting to make age was common as not queries across a soon he able to do so ming Clear Manuel. or a new tool from Class Assess Com Contractly in here testing the comp will ship this month it was oriefnelly

#### ashadolad to ship last year

Class Manager is and in antiqueties with the company's Clear Access query and according to all for Windows and Man intoch platforms which provides surmost for more than 60 databases, compa at afficials said Class Manager offers no modules Catalog Server Profiles and Municipe Each module runs on a Win-

#### down BC and due monitor and control town I'm and can implice and tour

"The a state of Clear Manager and something that people really need. If ruits [database administrator] control into lands decision support system (DSS) and an grace of the state of th Meta Groom inc. analyst in Mountain Meta Groop, inc. analyst in Mountain

to deploy DGS pains food and annual tools, and it becomes a nightmane trying toward it all "hound

In addition, Clear Manager can moni-In addition, Ownr manager can mouncompeting data-access products and development tools, company officials said This is negerable with either Depended inh Libraries supported in Clear Access 2.2 or via lighter integration with a newly evallable Clear Access application promanufacture Access 8

Enominates Ware inc. for example is tightly integrating the Clear Access API with its ObjectView client/server develonment took to provide more common and controllable data access for ObjectView annimations Clear Access for Objectives

Close Monor Clear Minng or emphise a conlems manager to

set up unmees will be prosected only with

data relevant to their husiness needs Close Mans so sets un aliases for arcane column names. This is extremely baseficial, according to Dean Kaplan, a data access specialist at GM Hughes Flectronies A major nemenace firm with offices in

Long Beach, Calif., GM Hughes is bring. ing Clear Access to the majority of its hurinous units "IS resources are shrinking and see needed something that would let us man are this large data-access environment. Some divisions have fewer support personnel and Clear Manager is a way to be able to send messages to them and control their tables once they get up and running." Kanian said. Setting un aliases

names and make them understandable. A good look The Meniter module offers a series of reports or charts that let the systems manager see the number of Clear Access noers currently connected how many queries are being performed, how long they are and who went them.

"lets us take long hideomy-looking table

With this information, the manager can then use the Profiler module to control what every user is able to do with Clear Access by creating "profiles." or groups of instructions that are inserted into special database tables and downloaded by every copy of Clear Access when it connects to the database. These

user profiles can, for example, make it impossible for neers to run queries at certain times of the day. Clear Manager also includes Script Server and Schedoler, Script Server lets users store Clear Access ClearScripts in the database and run them from there. It also offers a graphical interface for re-

viewing and editing scripts. The Scheduler feature schedules queries in hatch and allows them to be run at times of low database usage Clear Manager will be priced at \$4,500: Clear Access 2.2, also shipping this

month, is priced at \$460 for a single copy. Clear Access will ship on Unix platforms later this year

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#### High-tech wagering

CONTINUED FROM COVER I

across two video monitors overhead the Seebook Many resident is excited "Kette is an ex-KOOK, MARK, PERKEULD Other are less certain Gambling opponents

foor that new computer and network technolcodes are unbested to a department of plan-Implicate under

Moreover computer ethicists say the hightook been retoon now executions for information material resident involved in heilding and supporting duming systems.

"In 36 states, you can go into the store for a nteiner of milk and a loaf of broad and you're in a legal daming establishment," says Arnold Wexler, a noted antigambling activist and execwedger, a noted antigamoung activist and execpolyive Gambling one of 17 across the nation. With Internation TV year'll be able to stay in with interest coll come on and decine remarks membling without delting out of bed " be says.

Fear of losing control

Critics more that the wildfire greath of new and emerging technologies - including comnaterined Kenn and video micer stamus 800 and Others are compact multimedia received: systems and interactive raming channels on the "information highway" - will turn the \$329 billion symbling industry into a huse digital

"Availability plus technology plus advertising entals problems," says Jean Chasen-Fulnon expention director of the National Council on Compulsive Gambiliar (NCCG), a nonprofit

Placing number computers in bars, restauranta homes -- even similares -- promises to

etreship with Vid

lor in Sessmen Mont reion traducte for that I S and should fideo Lottery Technology rece introduced to 1886 PS/Soon-based Sure Short Dark the industry's first

West Cutters

►Oracle Com in mid-lanuary an nounced that it is teaming up with Bell Atlantic Corp. to create new applications for the con showed lefe

and the same of th loant afford it Chesen-Fulton says Wideseast arrord it, Causen-Parron says, widespread gaming anneurous agent and some pro-...

An estimated 4 million U.S. adplis are al. ready problem gamblers. A 1992 Gallup Poll many process guarantees in the U.S. at \$1 000 ner cenits. Het line cells rose 10% last. \$1,000 per capita. Hot line o

125-25 review and mushest dembling as counted for burdhirds of all 1992 wastering (about \$950 hillion), according to the magazine Comment Woosering Regiment the \$1.3 billion of the letters business has dearn some of the trace source y customer Culties can be coding faster transaction

Critics say har coming, faster transaction processing and order computer reconorigies more that provide the feet extrement instant gratification that compositive outsiders crave. Offering early on line and in-home acress to a compositive symbler is "like offerior done to

an addied " easy Torry Bynum director of rean added, says terry pysom, director or rein New Haven Coan "It's ming to rain the lives of more possis and some bankmaner and other financial problems."

Increased revenue to states But earlier on support for compulerized man

bling an industry studies that have found that compare states which research because computers ized Keen states have reported sharply inamount of between 25th and 1000 Supporters arene that new forms of computerized wastering provide billions of dollars in

nontax revenue to state and local covernments while diving electric more connectionities for entestainment and income Plus soletholy few persons are problem gamblers, they say The majority of people are playing an

.....

amount that is not exceptions." claims a employment for the \$1.7 billion Colifornia Lottom: She often a mount state study that found 81% of players spend less than \$5 a week on the lottery "It's the amount would spend on renting a video." Moreover information technology has nette

ally given state and fediral menisters turbies control over what often had been illegal mming years flevid from stee provident of marketing at Autolote Systems, Inc., a Newark, Del., makerofunmeingterminals

Lared by bure profits, states from New Hampshire to Oregon are scrambling to create or expend lotteries (one story name 26) "Telegambling is already being tested in the state of California as well as in Chicago and Onchec And other home-numbling services will debut this year (one story at left) as Bell Atlantic Corp., Turner Brondcasting System, Inc. and others rush to enter the lucrative interactive TV market

Such interest would have been unbeard of 10 years ago, when computer-enabled guming was burely an issue, Gambling 'technology' then consisted mainly of slot machines and racetrack and casino systems

"Commeters changed all that," says William S Bergman executive director of the North American Association of State and Provincial Lotteries (NASPL), a Washington-based trade nemoistics

#### Multibillion-dollar industry With the advent of reasonably priced lottery

systems in the 1980s, savey state legislators soon realized they had hit the jarknot. An investment in lessed or purchased equipment and a stick advertising campaign quickly paid for Itself many times over.

Today state lotteries represent a dramatic example of a successful business based almost

purely on information technology According to NASPL, annual revenoe from state interies swelled tenfold to \$25 billion be-tween 1983 and \$66. Growth, excluding video

While some states salivate over cambling's omtribution to their coffers, several influential industry organizations, when asked about electronic examing say IS needs to closely examine the social impact of systems they belp

lotteries bit 20% last sver

Ronald E. Anderson, chairman of the ethics

#### Vendor plans take willing risk

ned eaming tech ogies and services atic Corp. and Tale-Communica s. Inc. say they will layest \$15 billion in intersetive tech nology by 1997. Bell Atlantic Chairman Raymond Smith calls coming \_ including lottery and off-track betting-on of five "killer applications." He remellete 950 000 video-cmdemand subscribers by year's



Keno terminal are revolutionizing gambling

\*Total Communications Programs, Inc. in Pittsburgh plans to launch "Gaming Entertainment Television" in 1804 Among the planned complete are an intermeditor horse racing game called "Win, Place & Show" and a

estron and Loto Quebee just completed a one-year trial of North America's first interactive television waoring game. Players of the bingo-like "Dolines an Direct" het \$3 to win \$25,000

Fone, Inc. recently introduced a lottery-by-obone system. Players call an 800 number, enter a security code and use the telephone keypad to enter numbers of their

wagers in their state by using nev newionsly deposited in a LottoFone account service in Chicago, Sacramento Calif. and San Francisco.

choice Betters would nee for \*Interactive Network in Moun. tain View Calif. has bester oneration an interactive name

For an extra \$10 a month viewers can play along with sports shows to win prizes \* Autotote Corp. in Newark. Del., recently unveiled an inter-

active-color guning terminal that lets customers place their own pari-mutuet bets and play video wagering games. Users touch the 19-in. screen to select the or mendo recover or well as black back. Keeps and poker

NTN Communications in Carlsbad, Calif., is testing home pari-mutnel betting In a same railed "Triples. players wio points for picking the winners of live borse page character on comon

· Virgin Atlantic Airways announced that fliers on its 747s between London and Hong Kong would be able to play casino card games in 1994. Bally Gaming, Inc. purchased rights to the system.

# Lady Luck tangles with computer glitches

ation does not al. non-81 Hokete mene A la base base and a constant of Constant na say pay slips most be tors at the Palm Beach Kennel Club wished wisness and Cital picked withing namoers out ... their het They lost a \$17,000 navoff

ional vandors sold 465 -into Description come \$15,000 of the BOX COX assessed in automatical in turned by people who h Players who choose their own Lott pers instead of purchasing a suter-morrated "muck-olek ticket have a five times greater change of mineries according to a no cent suppoy of 30 states by Lotto Horid



ermil Restaurant in Paurinckel, R.L. and hundredy of other establishmen ons ean make electronic tragers without leaving their seats. A videa munitur showing game results haves above the box of left.

Global gaming

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interies (SR%).

Source The Council

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Interest is comp

task force for the 75-600-member Association for Computing Machinery (ACM), says technoland a comparing statement y (seeing, says tectator question whether any computer system has a harmful impact on society

While combling is not specifically mentioned in the ACM's nearly restend code of others. Andemand a Malamanta of Missanson application easy the code's first two principles say the isone should be examined and dealt with to the extent that it's a problem

"If immbling is the kind of activity that needatively affects one social group, like a lower income group, it seems there's a special obligation to consider " be come

Eric Roberts, president of Computer Profes-

& Cultifornia - Acadonis - Antested a purious that late almost and their - de contates conta

and siding sumbling cyclems inventoriim Luceno error the meture will let nizuers het nonstan without visiting a bank.

siemals for Social Responsibility (CPSR), says ed on the information superhighway. But it re no discussion about sumbling has arisen due. mains unregtain how much the Pederal Comno discussion about gamoung has arisen our mains uncertain now much the reversa Commation infrastructure

Bht Roberts serviceshnology.co. abled cambling is "an important public issue" that warrants for these discussion and incoins: A new CPSR report some of reservey communication and national hander on the information or Byzom notes that interactive

television duming systems raise new questions of companies securi ty and network especially against

"Hor do you ris systems so that rer programmers and comput er professionals can't get in there and make themselves winners?" house "What if data mis coronblad by a virus? How do we get bet-

tors' money back?" Notalwaysevil Richard G. Myers, director of MIS

al the Colorado Lottery, is not convinced technology is a villain how. ever Myers says he is "constant. ly" sensitive to the impact of his

He notes that the Pueblo Colobased lottery raised \$250 million for state buildings, parks and outdoor recreation areas last war (Other states make similar points. California, for instance. says it has contributed \$6 billion to nation since 1985.

"We're not part of the hard-core cambling came," Myers says, "We try to align ourselves as a healthy product that's fun."

What could or should be done by government, private industry and IS professionals to control elecically enabled gambling is far from clear Most agree that research, education about membiling and caution are required

ains uneleur Con-The street mann's train our gress and a task force led by Vice President Al ore are looking at how much policing is needon other commiss will get involved

with telegambling and other new form-of interstate wagering. Apparently some exercicle would suit many Americans: In a recent Gallup Poll, 61% said Presironfeed to the U.S. In

dent Clinton should establish a national tack forms on symbling Children are a appelal concern Ten percent of our callers are kids under 12." Wester says, not-

die up to 750,000 ralls ing that video-priented children and teens are rambing more. States around the country report nices in the number of tenns man-

State government has a reanonsibility to address this issue." Chasen-Fairon says

Certain states are making an effort. New Jersey, California and others print nurnings on letters tickets arring buyers to play responsibly And some state lotteries piedre a percentage of proceeds for symbling treatment programs. Connecticut sponsors compulsive 

state initalni don racing and aff. track betting workers. Oremo has adopted a vision approach: The Oregon Resource and Technology Development Fund has used lettery seed money to raise pearly \$80 million for new enterprises including firms doing

biomenanth on acquired immune deficiency syndrome, diabetes and other diseases, according to a fund spokesman. Illtimately many are betting

that popular opinion will decide the thornier gaming issues. Scott Sisson, owner of the Pop-

permili, echees popular senti-"I don't think state-run gam-

bling is a bad thing"; he says. "I've seen people win hig - \$2,000 - and lose big The only real problem to me is how to eliminate the state budget delicit."

# States bet on Lotto revenues

to be one of the fastest growing and most profitable forms of apaterized gambling. The following is a sampling of recent projects.

achusetts, which has one of the most successful jot teries, is readying a \$50 million to \$60 million apprade of its 20dation last fall. Nine-year-old Diettal Equipment Corp. VAXs a new VAX 6000 in Sacramento.

The approach system drives six redundant Ethernet I. Alia and 11,000 terminals state

nain theatate lottery and off-

track bettingin. wide system · lows has tack led a \$73 milli project to link every state agency, inch ing the lottery

nd other community groups ay State legislators receptly approved Keno for bars and

\*The California Lottery Comsion completed a large data

ake for states ·Colorado just added new bar

code technology that makes distribution of scratch tickets to dealers more efficient and lets players redeem them any where in the state.

with a 2 500

# **Computer Industry**

# Mail-order clones cling to bottom rung

As the his DC makers continue to take market charafrom the lower phylum of clone makers come come antiferentian mideles mail corder companies have such to the better of the lebe

Recognizing that bottom dwellers can survive and conn theirs there slone makes been to follow suit This

is hannening despite the to neppening despete the of market backer that is the past year have vonthe pass year mare real hard dissel and brossket For example, Apple Computer inc recently closed its fledelingents. los operation, and Comnog Operation, and Cour

natural transported through direct mail Not so long ago corpo nets best lists were stad len with names accommodating players from beauting players from price drope from PC heavyweights IBM PC Co. Compan and others, combined with the success of mail-order giant Gateway 2000, Inc., have meant losses.

The force of attraction

1990

about at Intermedicard Parts Coas, in Engagementary Marry He said a combined Zeos and Compu Add would stun the economies of scale that they lacked separately actine that the tree would not restain a characteristic deplicate of

Still although the two island to maintain consents readed names and customer lists. "It's definitely indicattenuation controllidation collector "Starbury anid Other

examples include AST Research Inc's securisition of Tandy Corp's computer operations the perchase of companine much as Austin Competer Systems and Everex Systems, Inc. by Tributation seems, mar. by

the disappearance of Korean hardware mak-Workers transment street. and the death of I have Computer Corp Anabute

played these moves and said that smaller companies will find their margins continnally assessed by the his players, which can get slightly better pricing and lowerage volumes for

CompuAdd and Zeos, meanwhile have other issues to strangle with Townshor they will have receibly \$400 million in sales when their menter over through, but they also have different focal points, which could help or destroy them Communied has its feeting in community markets, in part thanks to a successful effort to estab-

tish a point-of-sale business. Zeos. which has not posted a profit in serve greature - although sales are propried tarrets individual consumers Therefore, it could be rough ming for Combudd From Richard France

CompuAdd's chief executive officer and president, acknowledged that after fire-month small in hankwater

nome out of business that [bankruptey's] an priming time process to bell Keause said "it's sort of fun to shock people" with the news that the com

> Maarubile Northerte Core nuter Systems. Inc. may find itself enhanted through its conchece by Viewel Cybernet

ics Corp., a company half its size. Mujshid Bashir, Visual's chief operations officer said his company hought Northgute to going hardware partner for its multimodia restore

Visual also made the purchase because it was free nensine. No cash will change hands and Northwate shareholders will get 750 000 shares of Visual's stock in exchange for shares that were of questionable value

nhen issued three years not The acquisition at least seems to point Northeate in the right direction Bashir said Northeate President Khalid Ibrahim will be encouraged to expand sales from SiG million in 1993 to \$100 million in 1994 Throhim said in an interview before the buyout that he planned a "nogrowth" strategy to snare Northgute from needing the

cash that growth demands The no-growth strategy caused many a raised eve brow among analysis because standing still typically moons diffing frampled in the frantic IC hardware husiness. The new stratesy raised the other eventures Buving it to seil multimedia products is a dead horse from the set-so," said Martin Reynolds, analyst at Comnuter Intelligence (InfoCorp in Senta Clare Calif.

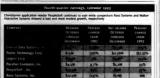


# Mail-order exception

For example, CompuAdd Corp. has sunk from a high Sylne momentary winner of the \$400 million Deskton IV contract in 1992 to a rocky 1963 of bankruptcy to solvency to acquisition bait. In the process, it has shrunk from a \$500 million company to a \$150 million one. This wild swing has attracted another stangering elocer. Zeos International Ltd., to merge with CompuAdd. Mersing with other struggling vendors or retreaching to focus on specific market niches is the most commo

ahrinking market share and often smaller revenue for

way for listing close makers to try and stay affoat. "The whole issue is volume," said Bruce Stephen, an



the invisation a to million constitue satellitus from the ad-"Total year evided jav. 1, 1994, includes restructuring charge total managinal of

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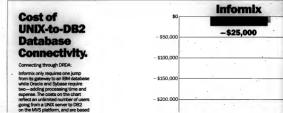


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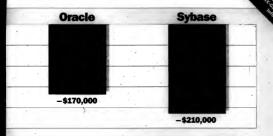
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# Vaporstriking

#### A few weeks ago Borland introduced Version A of its Interhase database management system.

The company held a nice briefing in Sag-Jose Calif nials and top exect at the platform. What the event

incked was any mention of a plan and ablamost date When asked Borland officials said the first ship. menta would be around midwear but some versions might not ship until the fourth quarter which as we mignt not simp until the louren quarter, which, as we was announcing a product as much as 40 weeks he. fore it ships. Chairman Philippe Kahn sold, "That's tore it samps, Chairman Philippe Kahn said, "That's inst how things are done in the client/server market

Unfortunately he's right Rorland is merely follow ing the lead established by its competitors in a market ing use man established by its competitive's lift it thanket that is long on plans and short on technology. Now that that is long on points and short on rectangle, now on one another to point out that they too, have been clicet/person all along Don't have a product yet? No

separat forms the sense release anyway It's a strategy a former most mate of mine most to call

"preemptive vaporstrike." The require is that the last hiar IS menagers need right now is promises. They're on to their kinsters in alliestors I'm ers are demanding more applications and services faster than ever putting a gun to the

head of IS departments that nemont them A CSC Consulting Consumences of ton IS management issues released last month ICW. Jan 3 ] found that rapid application development was No. decemed from fourth to 11th place in one year Thai rets a pretty clear message from users: Don't tal

to ue about your structured methodologies and appli on architectures; we want our neutrams nose You can find another parallel of IS interest in object sologies. The appeal of object orientation isn't productivity; it's disposability In a husiness world that is downsizing, re-engineering, partnering, glob og and constantly reorganizing, who's going to need a single program longer than about six months

any more? Users need tools, not pror in the upcoming issue of Computerworld Cli Server Journal, columnist Jim Stikeleather advises vendors to "isnore was marketing departments. They do not and expant know what your englowers want and need." It's a wise measure Marketers know a lot about positioning, which is what vendors are preunied with right now. They know little about meeting the needs of corporate technology groups caught in a macistrom of user demands.

IS departments aren't looking for panaceus or kill er applications. They don't expect anyone to solve all their problems at once. What they want is partnerships with suppliers that deliver what they promise and that commit to being in this business for the long hanl. In time, the market will choose the vendors tha meet those standards. But for now, most of the noise is being made by marketing departments





# Self-proclaimed dweehs sneak out

All Loan car in porposes to Phone I made "Man on the describe" (CS) Jam 108 is that I still don't know what ">A" prompts and "SYS CONFIG" Slos are

What the book kind of competer does Mr. Lety use? My PC has an A> prompt and a CONFIG SYS file. Stemen Sulemi Prevident

Bottom Line Comm ominations Molthy Calif

Writer Steven Levy must have no hair on his chest because he is still not familiar with the A's present and the CONFIGSYS file. (He called them >A prompt and SYS CONEIG

Moreo Dhore Toneka Kan

I have a very strong helief that none of us dweebs ever care about SYS CONFIG because the neutron that beins may PC boot up is called CONFIG.SYS.

Mr Less's hin notes that he anthored Hackers and Artificial Life and has been a columnist st MacWorld since 1985, if he calls it SYS CONFIG. does he really know I have a DC because for as tone

as Decknown about them they've been cheaper in price/performance than Marintoshen and worth the difference because I can practice my dweebiness by learn ine those silly little command necessary that make them work

vorites" ICW, Dec. 27/ Jan. 51, the Alon Dalk reference to the hybrid object/ Ospertino Colif relational database company

# Hot or not?

Voor list of whal's hot and what's not, "Easy prom isen/Hard realities" Dec 27/Jan 31 left us cold We were surprised to find Onen Database Connects

(ODBC) a "not" comments with direct database con partions because both of these data account methods serve valuable and did Discot detabase

tions are irreplaceable for high-volume, on-line transaction processing (OLTP) where performance and ODBC is just as irreck able for non-OLTP as tions. The majority of bu ness application 06 SZN D01 high-volume OLTP appli tions and greatly benefit from the trac have seenes provided by ODBC.

ODBCwon't real database connections for OLTP, but for many, ODBC is the ideal corrects solution

Raleigh, N.C.

# HP makes Open-ODB investment in the article "The fact-track in-

and it ticked me off! I get enough political BS. I don't need it in Edward B. Horstman Femire Calif.

Helson Inc. innocementally stated

that "HP has backed away from

Headest Deckerd Co. is noticely

Investing in OpenODR by develop

ing new partnerships, delivering

new functionality and marketing

those investments aggressively in

The recent announcement that

Taligent has beensed the client

portion of OpenODB is one exam-

pie. HP has ported the OpenOBB

elient to the Sun platform, and the

port to IRM RS/8000 sverkstations

Oner ODE marketing manager

I lost read the first line David

Coursey wrote I"The way things

ought to be "CW. Dec 27/Jap. 31

Douglas S. Dede

Heselett-Packard

Ownertino Calif.

and PCs will be completed soon.

What a Rush!

Computersportd ton!

this type of lunctionality

the petroleum industry.

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Elis Bother, Bureau C (100 S27 4433 Public Bother

Main Liferate Office

# Patent justice demands no monopolies

#### Charles B. Kreitzberg To its credit the natest office has removeded to the widespread outcry by promising a reex-amination of Compton's claim and conduction multiches rings on recents for colleges

On the whole, I have spough faith in our ludi-

risk system to believe this believes claim will

cital system to betterve tota russcrous caute with

Microsoft, Intel, Apple and IRM will not con-

ciously serves to hand

over a percentage of

their resenue to

Compton's coffee in

time this leave will

time this people will

face because a 69 for

ten majere was the

count, and the multi-

media resolution will

means revocation will

for first and that are

phasined the point

OK, we know

highway will

services. But.

wonderful

the information

eventually deliver

let's face it, they

won't arrive tomorrow, and we

really don't have a glimmer

about what they'll be.

Longo took a control

resident.

m a software designer, not a lawyer. Prehans that's why I can't noderstand why the U.S. Patent Office would street Comin ton's New Media a patent on multimedia commuting Sue the past 10 or so years, thousands

of my collectors have been marking to make computers and multimedia a reality Compton's has put together some fine multimedia prod-

mutumenta prod-nets but so have many others More than 26 million CD DOM: www.seld.in 1992 Now with an shaurd stroke of an uninformed bureau. eratic pen, the govcratic pen, ore ged the wiehte to this coré emerging toch. notone to a single

player with an ac-

press made it possible, someone published a

book and then raced to the kine's natent office

to claim sole ownership of that information

rior to World War II and the influx of

GI airfields, the aborigines of New

Guinea were one of the world's most

primitive and isolated cultures. En-

chanted by Hershey bars, C rations

and Lucky Strikes flown in on event

silver hirds, they were equally dis-

mayed when the last plane pulled out. For

years after the war these shandaned tribes

erected hamboo effuries of control towers and

engaged in rituals of landing activities, heeing

to amin attract the cargo planes. They became

known as "earth cults." people whose naive

Could a similar article of faith be fueling our

frantic push to build the information highway?

Americans, too, are feeling abandoned by the

beady prosperity of the 1980s and years for the

largess this "communicopia" promises to de-

movies, telecommunications and computers

coalesce, we are possed to deliver a diverse ar-

ray of interactive multimedia services to the

home. If the massive quantities of investment

capital, technological research and develop-

ment energy; media hype and political enthusi-

asm we're throwing at this effort can make it

so, then we will surely launch the golden age of information and ignite our economy.

Using fiber, coaxied and compression sech-

piques as the digital payement for this high-

As the once disparate technologies of TV,

belief was "Build it, and they will come."

liver ... if it flies.

oteanom and notational technology

Innahina



U.S. Patent Office has decided to listen to other opinions on how it should handle software natents but it shouldn't have muddled

into this area in the first place

prayer with an ag-It's as if shortly after Gutenberg's printing

that often the best thing to do is nothing in short well-intentioned but shower intermedians out do fee more harm than mod This is a lesson the natand office should take to heart. The oursees of natents is to opposite interesting and their mubile dischange But like frienlans lawratts overly broad patents can be misused by corporations as strategic avenues aimed at their competition Because these tection are so ovnensive to challenge, they neralize the smaller pleasare to combetage, they par

Any developer who copies another's eve violates convicts laws and should be held lin. his That's and the issue home The building blacks of self-man and techniques that in themselves are not critical Just as every Whater musical composition is made we'd to tones arrenmed in a particular sequence and every English language book is largely based on the same 3,000 words, every software program is built out of a structure that program-

gram is built out of a structure that program Carry Compton's strategy to its extreme. and eventually software developers will have to warry about who owns every lechnique they nse. It would surely squeich creativity if every program pooded a local review

Recently if was elemently around that the North American Free Trade Agreement must ness so that prodices regulation will not constrain entrepreneurs. We should apply that came arminent to software nations. At the lead we should demand that the patent office know what it is doing when it grants monopo Fies

Excitobarris provident of Cornellos Corn. a mathimedia software developer in Princeton, N.J.

# Information highway: Communicopia or cargo cult?

Max D. Honner

way, both regional telephone companies and cable companies are assured virtually unlimlied bandwidth at negligible long-term cost. We've seen a frenzy of competitive and collab orative maneuvers, as well as grandiose investment plans from those who would nave the history to our

living rooms. Equivalent efforts are being focused on building the claborate servers and switches at one end and plug-and-play

boxes at the other But their exact nature is still much fuzzier than that ni the conduit that will link them. To a large extent, their design will be determined

by the moltim vehicles that travel the highway The range of potential offerings is rich and varied, yet the pirotal questions are: What do consumers want? How much will they pay? And how soon will their preferences yield a

It's assumed that the sheer scope of offer ings, their visual richness and case of use compared with character-based, on-line services. such as Prodiev and CompuServe, and the huge economic thrust behind them will promote an unprecedented adoption curve. And many think the Clinton administration's aug port will accelerate consumer acceptance

For all the euphoric predictions, no one real ly knows when this

will become mainstream technology Radio the first break through in mass electronic communica tion, took 11 years to reach half the house holds in the U.S. But that was a slower

need es I believe those of us awaiting the arrival of the communicopin are on firmer ground than the banless car-

go cultists. Given the well-funded and massively parallel development effort in progress, it's likely we'll have the hasic infrastructure proven hardware avatems and a variety of marketable products within five years. Where the information high

way will lead us beyond that is anyone's guess Hopper is chairmon of AMR Corp.'s Sobre Technology



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# Newton PDA faces uphill struggle

Interest in entire genre wanes

Declares Date

Six months after the debut of Apple Computer, Inc.'s Newton MessagePad, the personal digital assistant (PDA) market still has not made the solash that some had pre-

The company has sold only 80,000 of the machines since Annuel Annie Vice President Geston Bustiens said at an in-August, Apple vice President Gastion bastions said at an inagency connections receiving, more times row or those states

The problem analysts said, is that key communication rate prometa of the MassamPad remain unavailable hole

bling its promise of "anytime/anywhere" committee 'It's hard for companies to commit when the nieces aren't all in place " and Diotor Hartrook, who reports on the Man-Interch Industry in his named star (The Mantacak Letter" in Alameda Calif "These are all look security Noons is mind to buy these units to do production work when everything is

In order to get the Newton Issis out of the station and make it appealing to corporate America, Apple needs to fill these mps, analysis said. Without key components such as: two-way paging espabilities and a built-in fax modem. "a lot of the banafite of the product are unclear" said Jeff Henning, an analyst at BIS Strategic Decisions in Norwell, Mass. Manager and the second of the second section in Manager compad cales when the key connectivity additions become available by midvear.

PDAs starting slow all around The Newton is not the only PDA to be off to a slow start.

Sales of a competing product called Zoomer aren't doing much better according to Andrew Seybold, editor of the "Outlook on Mobile Computing " Seybold estimated that the three companies manufacturing the Zoomer - Tandy Corn. Casio Computer and AST Research Inc - have sold only about 60 000 Zoomens

In the Silicon Valley start-up Fo' inc. is pleading with AT&T and other backers to pump more than \$3 million into

municator due later this year morrow close to the company municator que inter tints year, sources ciose to the company vices each month since introducing it a year age, and Chief Execution Officer Alein Resembly mountly told employees that a recretanization could cost up to half their jobs

Without its critical componentry, the Newton has remained a touch sell in a land where corporate informati systems hudgets have tightened considerably during the most two smare

"I'm more interested in putting full-fledged workstation on deals than melting the Nonton in the hands of neces anid Steere Pade discourse of anodomic computing at Cosmell Colored by Medical College in New York

Apple CET Michael Spindler has admired and that the Newton MessagePad has experienced some critical barbs since its introduction at last commer's Margarett game. He compared its rocky reception to the early days of television when the technology was surfaced and incomplete giving no hint of the immense equipted abstract to some

erately seeking applications The hir much now for PDA makers is to make the devices

indicanneshin for a hardware manufacturer that means applications, and lots of them. Only about 40 Newton appli cations are now available, although Apple officials said more than 2.000 developers have the software developer's

We can talk about how elever the technologies are and how easy it is to buy them, but the only way we're going to kirkstart the industry is through content" said Robert Growner, vice president and general manager of Motorola Inr's Paring and Wireless Data Group, Growney promised that Motorria would deliber a two-way modern for the New ton lates this was

That's great macra said but Annie utili needs to work on some of the Newton basics, such as speed, "It's still agonizingly-slew "said Squee-Gordon a designer at Walt Disney Imagineering in Glendale, Calif.

Analysts said the Newton may take sometime - perlu Analysis sale the resistent may take some time - persons years - to eatch on. "Building an industry takes a long time." Henning said. "The Mac was declared dead a year after it was introduced."

# Plug-and-play revolution hailed by users Ry Stuart J. Johnston

The arrival of PCs supporting the plurand play specification promises to begin simplifying configuration problems that have plagued systems managers since the advent of the PC

Once those PCs arrive - with operating systems that theoreterate plumandplay support - systems managers will be able to spend their time on more productive tanks, proponents claim.

Still, users are simply not going to ditch the 100 million plus PCs that already exist worldwide. However, these nsers will not be totally left out of the promised benefits of plug and play particularly if they install Chicago, said Carl Stork, director of Windows piatform development at Microsoft Com-

The plug-and-play specifications de-

and peripheral hardware, and software to automatically recomize what elements are in a system and dynamically configure them to work together without

#### lisers bailed the oppet of a plum and play

revolution but acknowledged it will take years before older hardware is phased out. "There will be a transition period where you have old machines with plugand-play cards [in them]," said Brian Mourn, assistant city manager for the city of San Carios. Calif. Moura said he sees plug and play as the most compel ling reason for nears to adopt Chicago.

A key niece of the plug-and-play puzzle is an operating system that supports the specifications, and Chicago is expected

While IBM has also promised to inclade plag and play support in OS2 and

PCs. Windows still owns a vastly larger market share. It currently runs on some 50 million BCs sv. a tittle over 4 million for OS/2, according to figures provided

Microsoft predicted in December that it will sell 50 million units of Chicago, also called Windows 4.0, in the 12 months after it shine

Overtime as the world services PCs peripherals and software that supports plug and play, systems managers hope to see the time spent on resource manage ment greatly decline.

This is an area that has fantastic possilities (because) the situation today is p nightmare," said Brian Livingston, a ther of Windows 3.1 Secrets, a best-selling book on using Windows

# Microsoft demonstrated Chicago's dy

namic plus-and-play canabilities at Com dev/Pull '85 in Las Vorus It is orbeduled to enter formal beta testing pext month. While the world waits for upgrades to plug-and-play PCs and peripherals benefits will be mined for users who add a plug-and-play-compatible device such as an add-in card to an existing PC.

"Chicago will look at exervibing you've got now and note it and attempt to con figure the new card using whatever recourses are evallable " such as unused hardware interrupts, Stork said. "If it can't, it will give you a measage saying it can't use those resources and sum what you might do to enable that I to happen], such as Move the interrupt on your



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Dr. Wichard Champaid

# Videoconferencing catches on

Personal conferencing group to create deskton videoconferencing standards

Dr. Wichood Est amountai

and more time mark to secting with nut ever teaving your weak - n a opereful

The Descript Conferences WorkGroup - poorbooded by Intel Corn plans to put together a enocification to open to material specification to efeate a standard tor desktop stateocomereneing - to the group in ciudes communicationis mary-

velgit AT&T into e i care ingg Pacture/Tel Corn and West Comb

Det Colombia min provident and mostal management and gener-Domonal Conference ing Division and that Injel was acting as a foodlitator to brange the group together

There is nothing that fills this some called personal conferencing today. So these nowerful play. one from key radue to develop these PDOCE, Gelmneer

The Secretar

Conference

missing include 18A

Analysts seknowi edged that the niav one wore nonneful but pointed out that now erful players have botched allumers be-

"A more of wondow with the stature of ATAT Intol and Compaq is important to the potential delivers Notable names of solutions, but oth and Microsoft erwise I don't know why this group is dif ferent than any oth or" and Buhard Zwalchkon-

haum an analyst at International Data Corp. in Framingham, Mass Looking out for No. 1

# Intel's facilitation is largely self-

interested because the chin maker can sell more newerful chins (and perhans more of them per system) if processorantensive applies tions such as full-motion, realtime video become commonplace. intel also has a number of prodtions, such as its Indeo video softand ite DroSham videoconferencing products (see otoment riofs)

Gelsinger said that one goal of

the new - personations attenue is for encender interpretability amone all avatems included rooms its all systems, including room-size only proprietary technologies The mean also hopes to have a sol the group also impers to naive a solvant Golumentund

Microsoft Corp. is notably absent from the organization. But field from the organization, the

ar pour. that much most the mount is stated function is Voice Snen an ATAT Pers Spain, and Artigit Fairs noumend late last year VoiceSpan dives year the shiften to



normond they much use VoiceSpan in products such as tales phones and fax maohunor

Good for games Work Groun large fee ATAT. Compag VoiceSpan also snonurts via conference ComputerCom ing software, the abit. Company couply Inc. Friescon Rusiness ify to do byp-way Name of the Later interaction measured the of even video Westborn Toloroom game playing. Segu of Inc., Novell, Inc., America's new Edge BirtureTel Software 16 interactive game Bublishing Com. module, expected to abin early in the sec-WavetPerfert Corn. Welforn and and half of the year VideoServer, Inc.

will use VorceSpan to let children playvideo games with one an other remotely Don Cooner nebri dent of ATAT Does dens's Demonal Communication Technologies unit, said the company was negotiating with a number

of modem makers to add Voice-Soon canability to their moderns. Oursently the Deterrort 2001 modom from Damelone is the univ product shinning with Voice Span VoiceSoan solves just the audio/data piece of the problem but

it's a great example of a technolory that we need to meld into the specification "Golsinger said Even when the specification is

set, it will stift take most of the decade to achieve its goals, he said, adding that development of the pecification goes hand in hand with product development

Intel's technology direction right on with ProShare

I total Corn's vision of the desistan of the hu Intel Corp.'s vision of the desktop of the fu-ture requires a lot of effort from system ven-dors and third-narty developers. It also has

several holes, including a lack of networking support, no cross-platform capabilities and a denendence on integrated Services Digital debendence on

Still analysts and lately testnelogydirection with its ProShare document channel program and volcoonfreement add-in burth is compelled and will be nominant offering

Dar Chang "change, the way non pic work," said Richard Zwotch kenhaum an analyst at Interna ternal Date Corn in Framingham Mass. Zwetchkenhaum said the Many, Switchercondon said tonote on documents sould wall proce revolutionary for currors

#### Different views

Some users agreed White word have suggested that ProShare is a noon man's encommune Steeder Cases manager of office technolowner at It's Ramourn in Burtland Ore , said he uses products such as Lotter Development Corn's Notes for different

thine. "I use Notes to share information" Cause cold "Notes is more of a collaboration pack are where ProShare lietal you share a document Casey added that sharing applications would be valuable to his company

The videoconferencing picture is less inter-William I. Lodge, project leader at Turner Corp., a multinational construction company in

New York said his firm does not view yadeoron ferencing as cost-effective and has little demand for it from users The relactance of some companies acide 7 met-bleenhaum saud desktop videoconferroring will eventually become a solid addition to corporate computing as price points drop

Right now the video add in boards list for \$2,495, but they can cost up to \$1,300 less than "\$1 700 is a fet less than it results be and it 'll be \$500 in 18 months. You have something then

that the mass market will want to buy Zweichkenbaum predicted.

#### Hardware ilmitations For now, letel is offering the industry only

haild not looks, with plenty of holes in the four dation still-to be filled. The most obvious hole, from an enterprise perspective, is that Pro-Share software and videoconferencing boards work only with Intel-based products The Intel architecture is our stud. We have

to win there, in the mass market," explained Andrew S. Grove. Intel chief execution officer and president. "If we do that, other people will ioin us and then can so to other platforms." Pat Geisinger, vice president and general manager of Intel's Personal Conferencing Divi ann pointed out that ProCham's connection sion, pointed out that Preshare's supporters include some PC software heavy bitters - Lolishing Com and Wordforfeet Com among them. These companies make software that many on non-intel pletforms, and intel expects runs on non-intel piatiorms, and intel expects development for other platforms



al's BroChase video person well allow same in differe 

"For the most part, we will rely an other peonio" to build coffuses on other platforms Gal somer said He also said that ProShare's

#### specs are not wedded to Windows Mare ProShare to con

Sources said Intel Itself will Introduce a Macir took version of ProShare in May but the comname reduced to exhibite Come in Casta Casa Calif. dominates to de a similar tene of product that connects PCs to Macintoshes at Demn '84 iCW, Jan. 241 Geistnere said Intel will also referen a version of the software that runs

video over a LAN Intel has currected the support of fee major hardware vendors, including AST Research, Inc., Compaq Computer Corp., Dell Computer Corp., Dupta) Equipment Corp. and Gateway 2000 Inc. These supporting partners may gov ProShare - and devictop videoconferencing some wourbt in the marketplace down the line.

Patrick P Day director of graphics/video audio subsystème at Compan, a aid thu firm will likely hundle ProShare with its systems and of fer the video boards as an option later in the

Despite broad-based support from private branch exchange makers and several regional Bell operating companies, trouble may foom behind Intel'adecision to have its videoconferenging on ISDN, which continues to lag in the U.S. market Costomers are trying to find ways

o achieve their goals without ISDN For instance, on the same day as Intel's apnouncement, Aox, Inc. unveiled boards that by year's end will allow for sub-\$1,000 video teleconferencing over fines that are not tweaked to run ISDN. Based on durital signal processor technology, the Am boards will also function as

sound cards or 19.2 bit/sec. fax/modetns. COMPUTERWORLD FEBRUARY 7, 1994 41

# Developers dread 32-bit OLE rewrites

and Ed Scannell

Some developers said they are not looking forward to Microsoft Corn's introduction of custom controls for Object I thirmy and Embedding (W.F.) because they will probably need to reserve proch

they wan problems and Known internally at Microsoft as OLE Control Extensions or OCX, the OLE contools are 39-bit bybrids of the 16-bit curtross are 32-out hyprais of the 16-out cus-VBYs ICW Jun 241. As such the GCXs will replace the VBYs. Although Microsoft is expected to provide some tools to belp with this migration, it is not yet clear have much manual work will be involved.

There are no precise statistics on how many VIIX neveranmers will be affected has this more but them are more than 100 VRX nackages available.

When Visual Basic was introduced it attenued third meeting to develop existent controls that can be automatically installed into the language's programming environment. These controls are little abunds of code in the form of chierts. that allow developers to, for example, inand a specadobort into an application. The VEYs can be used by nicking them off the tool palette and dragging them into the program space. The innovation led to an explosion of VBXs from third-party

Likewise, OCXs will eventually help simplify corporate programmers' lives by allowing information systems shops to nurchase some of these custom controls or create their own. OCXs will also work with languages besides Visual Basie but in the short term, all 16-hit VBX:s will have to be rewritten to become 32-bit

Facing the inevitable

Microsoft officials acknowledged that VNYs will become obsolete with the advent of Windows 4.0, or Chicago-specific, applications. But they pointed out that taking advantage of upcoming 32-bit systoms will require that 16-bit code be rewritten anywey Additionally VRXs will continue to be supported under Chicago for users running old 16-bit Windows applications

"At this point," I can see that [will be a neoblem) because one (VRX) can take a whole day to write," said Jenathan Borden computer systems manager for the educational systems group at the Uni-

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wesity of Texas at Austin's chemistry department Boolon's group which writes partment. Borden's group, which writes has written some VRXs itself and has man written some visco in the collection arehased others for use in its someware. A microsoft sponerman and the Vitahad it is not like it is a son characte. Some analysts took Microsoft's view

The second has a second to make the reservoid has never tree of make the or but node to 75 bit " said John Rymer. 16-bit code to 32-bit, said John Hyther, econor or the "pastrimutes computing Patricia Scabold Group in Boston. "Hexthat's tough but it's mot the way life is." The company is scheduled to an-The company is scheduled to anMondy But so for developery have been March. But so far developers have been kent in the dark as to how much the tools kept in the dark as to now much the tools will help and how hard the transition will he lessing some feeling odes

"My concern would be in the term inany content would be in the time the took so it would still be a major impact." sold John McComb supervisor of research and development at Continental Hankboom Systems Inc in Libertyville. Ill. a developer of software systems for hounitals



#### Deskton Computing

Manufacture to be better to the 4.5 Phus a 79-bit multimon - 1-1---database management system for DOC DO

Associated the Pollogue Wisch, some neary Virgina 4 Soffers more than Winese pany, version 4.5 otters more than 50 new footunes and enhancements decisioned to make it easier for users to perform own

nice data management tacks without Ogramming.

enced undetable unitirable views mulspeed, updatable multitable views, multiuser importexport menties, dynamic population with out a joint and conditable Prince 4 5 Place sente \$705 Place sens

1 AN marks are available for \$995 b. Microsim MOCH CAD DOOR

Source Technology Inc. has intro-Sengate Technology, Inc. has intro cude 2LP (low profile) and the A Wahate Harak Adiah daina

kwk 4desk drives. According to the second rate, comamond of 7 000 extension twin with an arr eram latency of 4.17 must an expression erage usency of 4.17 msec, an average multisestmented adaption cache The Hawk 4 features a speed of 5 400 The Hawa a remures a specia of conE SE more on company word seek time of S 5.56 msec, an average read seek (ime of 9 msec, and a 512K-bate multisegmented mac, and a or

District Court from \$4 000 4 00 000 rricing ranges from #12 b ocobaic itt

Canon Computer Systems Inc. has in-Canon Computer Systems, Inc. ras in-

Assembles to the Costs More Calif. company the product offers 600 decise output and 8 nam/min around and it can nrint most Adobe Systems Inc Post. Soried Level 2 documents with 2M between

of standard memory The LRPARN also provides automatic interface switching, which allows footh DC house and Manietankinson to about

a wandle printer without a notwork The I DD 000 meets \$1 626 Comon Commuter Systems

CTALARY WOOD

Partine has introduced CROA a full-color Distral Engineers Com DEC VT/99 compatible terminal

Appending to the Sun Your Calif com namy the C20A is a high-performance model with ANSI consistions and fullandor display

lisers can choose 16 foregreeted, and 16 background-independent and simultaneous colors from a nalette of 262 144

Fratures include high-resolution dis nier and software connect for a perial industry-standard mouse using ANSI se-

The C20A can be used by Digital and Unix more

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Product short

Encon America Inc has introduced the ActionPrinter 3260 a colonungradable 24-pin impact printer Features include t0 built in fants, a front-loading 56-sheet names tray burisontal or section) operation complishes and a two butters control nanel Cost \$299 Frage America Tor-

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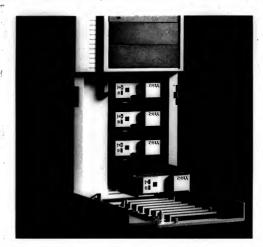


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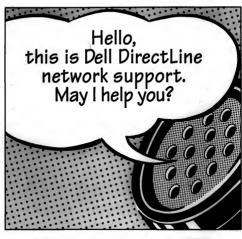
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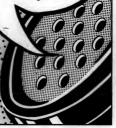
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# Customer data a top concern of retailers

Dy 1 Domini

The forthcoming inform Ine rorthcoming information super-highway and its potential impact on home shopping were among the key themes at the 83rd National Retail Federation Annual Convention & Evne hald

But for most estall information are the ros about retain theorems of ed an opportunity to explore more functible issues involving the deployment of information technology for database marketian marchandise judictics and wireless point of sale (POS) systems

For example, executions at Cathorines Stores Corp. a \$470 million Mountain. based rotailer of large-size warner's anparel, detailed the impressive paybacks the common has received an its STS Sys. tome Customer Profile System customer information database software.

In late 1992 the clothics installed the QTQ coffuence on the Univ-based Date quarters and on the POS systems at its quarters and on the ross dystems at the ounces - rujusu-sc., systems, mc back around and parchasing information on automore according to David C Els. wit Cathaginas' exception sign manufacture

and chief financial officer The coffmuse has belond Cotherines compile more courses information on

accurate unormando de current and prospective tion has led the commany to refine its direct-mailing campairus. Before it de pleased the systems, the retailor tallind \$1.87 in calcumor mailor By

united the collector to named the come and testes of its enstoner have Cathen. ines' sales per mailer iumped 67% in 1993 to 85 t3 Forell said

and by enterprising its murtamor hase more narrowly. Catherines was able to reduce its advertising expenses over the nect year by \$56,000 Evenil said "Min looked at the inchementation of the detobacca from a cost assistant at a referring Product announcements

The result connectence since served the done to tout their name. The new proof uses waren. The new proa Planebut a third manual tion merchandise planning NATIONAL and analysis software say and analysis software sys-

Committee together Equipment maphical mon interfere system was designed to consystem was progreed to of data into more surful in formation that will have morehandison analyza raior taundy confusio numbur

Increasing and react quickly to chape Instrumental sound in the Planshul designed to operate beween Digital's OpenVMS VAX and Alpha server platforms, is sebeduled to begin shipping in the second quarter with price or starting at \$30,000 for a back of a Company of the 's National Company Division a provider of network Services siene for Vice International's ViceNet deb-1900 and mention and address

poola ros tatalorization and sectionical Between an Drivete I in CVD to combine CompuSerso's VPL pervises, which comhine Intermeted Services Digital Natural and Digital Data Over Voice technol order more decimed to reduce authori cation encount times from \$0 to 20 cm contacto four to pight spronds for

\* AT&T/Global Information Solutions in red Remote Store Management (RSM) a unite of integrated store opera tions and network management soft more modules decimed to anhance the flow of information to multiple or material sites, RSM, which incorporates Star Seniry and Network Management Alert Section collection to management A the enterprise network, is to begin ship ning in the second quarter with individ ual application fees starting at \$15.000

## Ontabarer

# Some apps a tight squeeze on NetWare

Ry Kim S Nosh

Oracle Corn. Sybase. Inc. and rivals are touting Net-Ware remains of their databases as basiner all the functions of a Unix product while running over Novell. Inc.'s operatingsystem Homeson want must size ennifertions carefully be-Overhand as M.M. Office to overhand as Warn-anchorod architec-

form (milest to noncome loss big a system onto a Netture, observers said, Users accustomed to slapping rather befly applications with several hundred users on a Univ-based edition of Oscarla na Prihana DVM Posta or will have to adjust to a smaller, sometimes less powerful NetWare operating system, users and ann lysts said.

The Rist Four database makers - Oracle, Sybase Informix Software, Inc. and The ASK Group, Inc. -- aim

so-called NetWare Londabie Medule (NI M) databases at anyone doing circn/server compoting in a smaller than-enterprisewide cuvironment. In theory, users can run a rebust multiuser relational database over existing Net Ware networks.

NLMs are appealing under the right conditions. People who want to grow workgroup applications to a depurtmental level can use existing NetWare LANS ... and the PCs they run across -- by installing an NLM.

Indeed. NLM sales continue to grow for the majo database makers and their rivals. Gupta Corp., for example soldroughly 6 600 licenus for a Net Wareversion of SOL Ruse in 1995 85th more than 1997's 4 600 licensus according to a snokesman NLMs accounted for 5% of Sybase's fourth-quarter 1963 sales of \$137.8 million. or about \$6.9 million for the period.

But while an NT M dat those is not a ctringed down or version of a Unix original. NetWare itself can rein in the functionality of the system, according to observare Rockwell International Corn's Space Division learned that leaves through trial and owns with NI Ma from School and Oracle

The group tested the product the trouble arose in running a client/server cost forecasting confliction remarkly in either an IRM OS/2 or a TCP/IP environ ment, said Randy Corbett, proi ect engineer at the Downer Calif.-based organization.

However, application develop eto may home been "a little too enthusiastic about what we could reasonably fit on a Net-Ware system," Corbett said Lured to NLMs because it was ed to use NetWare networks at ready in place, the group found that the application had too

many users to perform well on PCs running NetWare To be sure, inadequate hardware power and network

operating system contributed to the subpar perfor ance of the NLMs, Corbett acknowledged. But NLM makers may be guilty of overselling the pow

or of a NetWare database, according to Corbett. "It was overly hopeful on our part to think that we could run naterorise applications there on the Novell platform."

The company opted for Hewlett-Parkard Co. Unix hores to boot the division's majostroom hashness on terms and rejectated Oracle and Sybase NLMu in smaller self-contained anniestions in the information systems

#### Why they buy

ste the difficulties, the number of users planning to buy NLMs this year is growing, according to Intelli-Quest, Inc., a market research firm in Austin, Texas The trend is especially strong among user firms that typically spend more than \$75,000 a year on networking handsome and coffee and icon obsert

Often Jarger firms have sevral remote sites that have group and require the indus trial strength of a relational database but have heretofore been running small LANs, said Debbie Shure, marketing associate at IntelliGuest. "Those situations are well-suited for

detabese - 50s enver System so - it due out by March. an NLM "she said. hout the same time a For NetWare mers who Mirrorath Com. must to prefer year amelian nlications Oracle bas intro the nandart is due

Subsect's latest

disped a companion product to its NLM called OracleWare The product, sold through Novell reseliers, is a bund of the Oracle 7 database with NetWare 3.12 or 4.0. The major difference between OrneleWare and Ornele's NLM is that installing and truphle-shooting OracleWare

coduce for both products. And users can call just one company - Novell - for support Ornele has no sales figures for OrneleWare, which arted shipping Dec. 6, a spokeswoman said Early sales numbers were not available for ASK's In

error 5.4 NI M. which shinned early last month. However ASK eres "major opportunities in our installed base for an NLM a spoke symman spid

# The cost of doing business with LANs

Two recent studies have not some hard man t we recent stuttes have put come fitted name brown intuitively for years. The majority of and a section have put to find the products and amondures they need to manage their LAN ettent/semes installations offertisely and they chemoser ter mathematical creek in Information

systems overtime and revenue and productive -Antenna ferfood resonate loss due to network and eve-

tons options assessmed \$3.5 million last year per company according to a survey of 106 to a survey or rehie for LAN and/or computer avstems by todaputer syste

This compares with in a 1989 study the till is time saudy, the search firm said.

However the suc AMPERET, the Sveroutages took a dive sens the last four years the study found (inc. chart) Behind this trend in the encer ingexperience of LAN administrators no

well as improvements in products that have network minurement functions

Also, intelligent routers and hubs can proactimbe determine when trafficur error levels are setting too high. And the emergence of the Simple Network Management Protocol standard. supported by centralized platforms such as IRM's NetView 8000 and Hewlett-Packard Co.'s OpenView, has given managers at least some shillty to monitor a Wide variety of network deviene from a sinete console.

Unfortunately, systems management prod sets with functions such as troubleshooting, inventors and accour management are more tions behind network management products.

description market is controlled and automated management. This is the ability to colaformation from or download commands on undator to a street of street abiretity disor updates to, a group or geographically use minimal human intersention "Too many management tasks are still performed at the problow vite " according to the infonesies remort

This lower LAN administratory coordinate too much time fighting fires and too little time ameticing reporting measurement. Implement practicing proactive management impression

company as many cars \$71,000 annually in \$71,000 amounty in productivity that the

A Precional So. wareh Group, Itestudy backy this on The anostal operating expenses per server at multicompany sifes to establish several ior systems support ing multiple client rune from \$41.173 for Novell. NetWare to

em 510 for Rennan Contain her transpor The higher cost for Vines can be attributed in part to the fact

that Vines servers tend to support a broader range of services and a larger number of users. and Chard Ball, a copier industry analyst of Nonton Mass-based Rusiness Research Group and writer of the report.

Meanwhile, cornerations continue to downsine hardware existed applications while cornorate overs increasingly depend on nettheir day-to-day activities, lofometics said. If vendors do not provide a better set of tooks and platforms onickly resumer loans from failed elient/server systems in 1994 are likely to be at least as bloody as they were last year

# Ranyan comes out on top

time an per ser ben instant coeffe to ad leter some are more on then

Indeed, Banyan's Vines gen erally fared better than other terms of the time upers to-

form day to day torus way workey .... SCITICES OF S CREEK or account of the number of users com

plained about the diffi painted about the thincuits er and Microsoft Corp.'s LAN Manager, according to Chery Rail a genior industry snaky ni Ducinear Research Group

I All administrators into viewed recently backed up Self-accountment of the rethe case of administration of the network operating syst - moderate "These been a Ren since 1999 " sold Ken Hudson chief of system support services at Employment and Ima

nered notes with a friend who managed a Novell petwork, I was happy that I did not have doing a WAN or simply adding server, [Vines] cannot be be Hudson added that he had administreed the LANM

tal Equipment Corp., "and it

A marian nerior case of stiminis n noomen is its StreetTalk III

tants agreed. sble, corporatewide address-ing, and administrators can and the same makes to assign network resources by pame with out neers having to know a service's ohvad-

cal location," said Kevin omuse an independent network consultant in Ottown and fully integrated with Vines se-

less or deny individuels or time access to any rescurre on the network through a sing eventually provide the same in.

tegrated log-on and user-accress control via the NotWare Di restory Service according to smen House NDS is still a long way from pro and Microsoft are talking stah al directory services in 1995. Business Bonnesch Gronn in

terriowed 190 sites, with 30 to 40 respondents per site. The rewant was a summissioned by Are

- Elizabeth Horseitt

# Novell stalls imaging kit delivery

The cost of LAN outages at sample

organizations has source to 57.5 restor per unar man while average output duration has

By Fills Booker

# Novell, Inc. is late with a developer tool kit for an image-enabling version of its popular LAN product, but analysts said the company still has time to capi-talize on a healthy interest in document

Beta versions of the Image Enabled NetWare tool kit were supposed to ship in December, but the general release has yet to go out the door

"I think 70% to 80% of NetWare customers could use imaging services," said Novell product line manager Scott Wells. He suggested that the first market would be for departmental applications, such as viewing scanned images and faxes, but confirmed that Novell was intent on

plications as well. Noveil first appounced plans for an im

are-enabled NetWare in October 1991 when it contracted the project out to Eastman Kodak Co. subsidiary Imarery. Ine in Billerica, Mass

Since that announcement however the product's features have understone a series of revisions according to Brare Silver vice president at BIS Strategic Destatements Named Manage

"I think their original idea was ito target) the office market, but today they reccoming the market is more in the line-of business applications," Silver said. To that end Novell has gone to some trouble to make come the product works in a pro-

But at least one impring interrator said Novell's offering would not compete with high-end imaging systems similar to those meet for banking and insurance claims processing, for example

"My initial impression is if anot tarreted at high volume, trapsaction-intensive applications," said Mark Scheffel, vice provident of commercial systems at Universal Systems, inc., a systems integrator in Fairfay Va

Demand is high Scheffel and the requirement for imag

ing services at Novell sites is large. "Our husiness has doubled every year for the past five (years)," he said. Universal has been implied in some 100 imaging deployments; roughly 80 of them use Novell I Alle and an optical classes subsystem called Optical Storage for NetWare from LaserData, Inc. in Tyngsboro, Mass.

Likewise, Novell is already shipping a system called High Capacity Storage System (HCSS) with NetWare 4.0. HCSS. which improve developed, supports optiand devices attached to a NetWork server Along with HCSS, Image Enabled Net-Ware will contain three more service Mass Storage Services, which distrib utes HCSS and allows other servers and morkstations on the LAN to necess an optical device attached to one server, image Management Services, the "viewer component that bandles the rending and manipulation of the image: and Docu ment Management Services, which main

to incide index database of imports A noticeable hole in the Novell imaging strategy bowever, is the absence of a workflow component for managing the automated routing of documents between individuals and applications

"Work flow fits right in an the next com ponent," said Welts, adding that Novell is looking at many solutions to the workflow issue. He stressed that the workflow services component, whatever its source, will be interoperable with the need of the architecture

# The Apple Report On PowerI

# NUMBER 2 - RISC PERFORMANCE AND CROSS-PLATFORM COMPATIBILITY

Many of the most popular applications have been or are being optimized to take advantage of the high-performance PowerPC processor.

DougrDC chine are factor and less expensive than Pentium chine - so are the negronal computers they will nin

A complete Meciatech system with PowerPC will cost well under \$2 500 but will affer better performance than higher-priced Pentiumhased systems

With Coff Mindows Manintonin with PrwerPC will have the ability to run DOS and Windows applications. unmodified

For more information about Macintosh with PowerPC. call 1-800-732-3131 ext 150 in the U.S. We'll send you a copy of our informative, free hooklet PowerPC Technoloay: The Power Behind the Next Generation of Macintosh Systems In Canada, call 1-800-665-2775, ext. 910.

In the first half of 1994. Apole will introduce a new family of computers that already has the entire com-

nuter industry standing on end They will offer hetter performance than com-

nuters based on the X86 micronmossors. They will be extremely commetitive on a price basis. And they will be compatible with Windows and DOS applications by using SoftWindows software

They will be based on the psychotionary new PowerPC microprocessor created jointly by Apole, IBM and Motorola

For the first time, deskton nersonal computers will take advantage of RISC chin architecture previously found only in high-performance workstations. This advance will make possible quantum improvements in the way we manage and work with information.

#### DISC no CISC

Tremendous advances have been made in CISC architecture over the years. However, the physical limitations of the new high-nerformance CISC design mean that CISC chins must be significantly bioper and more complex. and must run at hotter temperatures to perform the same tasks as comparable RISC chips. Consequently, the newer



generation of GISC chins. like the Pentium, are much more expensive to manufacture. Which means that personal computers powered by PowerPC chins can offer a stenificant advantage in price as well as in performance.

As you can see on the chart RISC microprocessors offer dramatically eneater notential for prowth leading us well into the next century and increasing the practicality of features like waice recognition, videoconferencing objects oriented software and multimedia canabilities .... functions that will be integral to doing business in the 21st century

# More compatible personal computers

Annle's new generation of Macintosh' nersonal computers built around the PowerPC chin offer the ability to run MS-DOS and Windows applications as well as Macintosh software. Movine from one environment to: the next will be seamless and even more importantly it

will be effortless PC users who move to Macintosh with PowerPC will eain acress to the large number of new applications which take advantage of the incredible performance of the

# Higher-performance optimized applications.

new PowerPC chin

When PowerPC microprocessor-equipped Macintosh computers begin shipping, software developers including Microsoft, WordPerfect, Adobe, Aldus and Claris will begin shipping new versions of their most popular software, specifically rewritten to take full advantage of the new processor's canabilities

These ontimized, sometimes called "native." applications will offer significantly faster performance than their MS-DOS. Windows or current Macintosh counterparts.

# Unprecedented value.

Because RISC-based personal computers cost less to manufacture than equivalent systems based on CISC chips, we will be able to make this technology available for well under \$2,500 for a complete mainstream deskton system. Competitive with a lower-performance. Pentium-based PC.\*\* Watch

# Finally,

Vou've probably noticed Most Pentium" nmossed PCs

don't perform much hetter than machines with :486" chins.



# hat not only has a

That's not surprising. Most PCs use inefficient buses that sit on

sluggish programs start to fly. Graphics snap onto the screen.

cost less than you think Why would you sell a pent-up hox, when you could go way beyond that and sell a hot

DECoc XL? You wouldn't

Pentium o too of the processor and

bog it down. They simply aren't designed to

High-speed peripherals kick into gear. Powersucking applications

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# y use it. out can acti

make the most of the Pentium chip. The DECoc" XL 560 and 566 are

Their high-speed PCI bus unburdens the CPU, unleashing up to 66 MHz of

Pentium processor power. That means

start moving again. And productivity skyrockets

Technology Made Easy. We didn't just take the load off the Pentium chip. We also took the strain off your customer's budget. Pentium technology DECpc XLs



Beyond the box.



## Workeroup Computing

Windowster Systems has introduced FlashDick Array a radioclast arrays of PARTIES AFFRY & PEGUODANT AFFRYS OF features high date evailability play the

performance of an advanced 32-bit such per for analyce of all a According to the Wolum Mass com-

name the product provides but common ble Stain, diek drives with on line data rebuild in cost of a drive failure FleshDisk Array RAID 5 includes a

FlashFISA controller board with a dedi-PlashersA controller board with a dedibates) of RAM cache SCSL2 adapters and ashles and an external engineers with redundant power supplies

FlashDisk Array RAID 5 costs \$17,395 for a 4G-byte array and \$24 495 for an 8Gbarto nervay

te array. OTATIONE OF OR

wand Inc has introduced the Beyond

Mail 2 0 Remote Access Edition for Windows and DOS Appending to the Burlington Mass company the product gives both remote and traveling users complete electronic munications with their home office

Version 2.9 offers full access to work New applications If also has the shilling to determine whether a machine is remote or connected to the network and automatically configures itself to the ap-

propriate environment Sapport for Lotus Develor Corn 's Notes 3 @ Alternate Mailer Watermark Software inc 's Object Linking and Embedding-based document imaging capabilities and a variety of other database

emate la nemádad Reyond Mail 20 Remote Access Ediion, including Novell, Inc.'s NetWare Remote Message Handling Service, costs

► Beyond (617) 229,0006

Paradigm Systems Corp. has introduced OnSchedule, a distributed network job-scheduling and work load management system.

According to the Newark, Calif. comnany OnSchedule is a comprehensive tool that controlizes control and manarement for tasks ranging from simple atch processing to entire production ex-

Postures include a graphical inter face load balancing error movery and resistance monitoring

The product requires Unix running X11/Motif and is available for Suo Microstems inc's Solaris 1 0 platform The server version of OnSchedule

costs \$2,500. ► Paradiom Sustems (610) 449-8551

Annily Inc has introduced Real Time a stanhical sureadsheet that enables users to maximize real-time financial data with the rapid development of custom models and analytics

According to the Westboro, Mass.,

but data feeds that are shown through a circles that are moved threat for on customizates Appex spreadsneed for op-tions pricing, nortfolio profesia index addition or or or other manufacturers

Ottrage or excusinge rai New time → Appear

(508) 870-0200

Missesser Inc. has introduced I Aller ness a reduct designed for con remote users to corporate I ANs.

According to the Norwood Mass, comnamy I Allermous combines a fully into grated, high-performance access servewith Windows hand client coftwore and MAKE AN INDOMESTICATION OF STATE OF STA and the section of the section of the section

One with one connection. ote Windowshood remote access coftware LANexpress Server a high performance server that combines acpersonnance server that commines ac-

remote control and remo

NOTE of the other word on the court of the Ring! AN interface and Carbon Com for Windows Missours's servets contact on

plication GCBDOS. Lacrempt con in available in

Drives tunes from \$1 400 to \$7 000 and include the server network management and an unlimited license for Carboo form

Microsom #121551.1000

# "You can be a sheen, or the shenherd,"



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# How to Unravel the CLIENT/SERVER MYSTIOUE.

at them is no mystique. Rather them to be after of cliabilly frantic software companies content to have you believe that effective open system solutions romain elucius while they rush to understand, develop, and market their intermentation of eligenteeper Then there's Lawson Software

#### An Onen Systems Foundation



At Lawson Software sur'us been commit. ted to open systems sieve our commony our formulad in 1076 186 always believed that

to be a valuable business partner, an appli cations provider must offer choices for business strategy development. So for us client/server isn't a new phenomenon Instead it's the next losical sten in our development. And it exists today - fully developed and fully functional - in the latest release of our enterprise-wide cross-industry world-class business application software

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The truth is, client/server takes on a snecial meaning for each individual business computing environment. That's why we've structured our client/server solution as a comprehensive 3-tier architecture. delivering you maximum flexibility in hardware, database and user interface. It's why Lawson's products run across plusforms like the AS(400 as well as LINIX systems such as the RS/6000 and HP9000. And it's also why we feature seamless support for a variety of leading databases. In short, we offer options that allow you to make the decisions. Based on your

artistica bardware configurations and your place for feture development you choose to place the components of client/server where they will deliver the present value and performance

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and only different way of technology ands to a custom with the could hilly Semanded in today's changing

We incomprise the latest GUI tech. notories, creating a user-friendly ancienment that melucar training time. Individual users can maninuate windows irons and tool bars to reate a personal work environment that increases reaductivity. In addition



a sprints of inter national markets

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tion. Together, these two commitments have resulted in truly flexible business solutions created with your needs in mind We'd like the chance to demonate this to you. You'll see how - from our system architecture to

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tained the ability to interface our applications using character-based terminals

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sive "drill-around" carebility: now a cin-

ele click of the moose allows transporent

access to data from multiple spelications

and platforms. And finally, to truly max-

Lawson's single, worldwide product set featuring all the freedom of our flexible client/server architecture - means the ultimate in simplicity for large, international

# Cost takes backseat in router/hub rollout

Managers look for vendors to 'keen it simple'

On Cranhan D Plass In

 A deluge of routers and hubs with fea-tures designed specifically for the re-mote office has debuted over the last th, and manageability, flexibility and ease of use - rather than price and ease of use - rather

of the recent ComNet show in Washington Cisco Systems. Inc., Proteon. Inc. 3Com Corn, and NEC America, inc. such unveiled low-end router for around

\$3,000 ICW Jan 171 while Fibomus Com 3Com and David Systems Inc. all chemnel stackable bube starting at roughly \$100 per

"This man is south show. ing up to be the year of the and any contract year or and mont being the himsel cost obstacle out there by far said independent networking consultant Fred McClimane in Ashburn Va Other analysts agreed adding that wandors' shility to find the right mix of managemental

While poly 18,000 note office mute 1992, nearly 190,000 - copector in map

nough determine who make boths had nonwould describe was ..... According to make m

administrative costs greatly overshadon the cost of the hardware itself o the cost of the partiware used. de plans to connect 15 of its resumbly 45 branch officer nationwide with its ITS branco otnees nationwide with its U.S. and of the year expending to John Krok telecommunications and network seranager at the insurance provider

Most of those officer don't beam look. nical neonie, so keeping a uniform management platform in place is very importook if he said Thomston Venix said Sun I ife will most likely look to its current internetworking bardware suppliers — WellPleet Communications Inc and Bytey Inc. for compositely with

on then take a change on a nomanados "A 20% price difference from another vandor may raise my evebrows and make me investigate but neshably more? make me switch" Krok said "Re-

concern Anything less than a 20% conscern. Anything sees than 6 20% March to not observ

The cost for headeness to the and for complete in manager in no context " said but Board a network angineer at Duke University In Darbon N.C. "Managrability in Durasm, N.C. Managresoury, histing concerns followed by the 

That is a nonular position among us ers according to Kathryn Korostoff president of Sare Network Research ine a consultance in Natick Mass "The personal office doesn't come about our port prices " she said "The main concern is how much it takes to get up and rupping and the cost of managing the site ner

Rest of both worlds

Konneinff and other analysts singled on Cinne's 1550 menter line, which features a sub-\$1,000 entry price for the bardware with several software bundling options and Phermay's stackable hish which features a unique cableless, interiocking design as particularly intriguing offer

However, they said most of the prod-

nets offer a new level of flexibility improvide administration and maintenance

proved administration and mainted Cisco's failure to address these issue with its first remote poster line the Cisco 2000 femily served the comment to se lease the 2500 series after only six months, analysis said. The 2500 family includes all of the features of the 2000 line with additional wide area natural connections and protocol support at sid

nificantly lower prices Other than management the Kingson point for vendors to forces on is case of use, analysts said. According to Frank Druberk president of Communications above, president of Communication the best way for vendors to differentiate is to adhere as closely as possible to the KISS principle: Keep it simple, stupid,"

ity case of use and price Messaging gateways

# Software opens gate to standards link

Photomicanal managers revine to bridge Univ.haged and Y 400 mail exercises will soon one "enteness" noft. ware that can translate attached files graphics, voice

and viden files between the two exclums introduced recently by messaging yender Osiware in Burnahy British Columbia the enteresy operates using the Multipurpose internet Mail Extensions (MIME) to

the Unix Simple Mail Transport Protocol (SMTP) messaging specification, It is slated to ship in March. The MIME specification allows messages sent on SMTP services - among them the internet - to carry binary file attachments such as attached word processing documents and graphics files. Without MIME support, SMTP messages can contain only text; with it, the enternay will let internet and X-400 users exchange attacked binary files

For US West Technologies in Denver, which provides

technology services for above company US West, bringing together the X.400 and SMTP communities is important because X 400 is a popular standard for connecting dissimilar messaging systems and accessing public services However Univ-based mail namely the Internet has a firm erigen engineering departments.

"Its a bot issue because X.400 and Internet are the run big standards out there. It's kind of a 5050 split,"

ect manager. The company already oses internet-to X.400 gateways; but it does not support MIME and there

al intervention. Sherman added. To send an attached file such as a Microsoff Corn Word document has tween internet upon who are not on both SMTP/MIME systems, the users must encode the file using a standard almosthm called DuFacule. The recipient must then decode the file using the UnDecode algorithm and hope that the Word englication can read the file, explained David Ferris, editor of

the "Perris E-mail Analyzer" in San With an X 400 entersive MIME the file would be able to identify itself as a Wood downwood and the secon would

not have to encode and decode he However, while MIME and X-400

translation could be very useful, users first must have MIME systems, and Perris estimated that only 85% of all SMTP messaging is currently MIME

For instance 118 West Is not yet us

ingSMTP/MIME-based measuring but Sherman said expects to do so in three io six months. Unix venders that offer MIME support include Unipoles Ltd. in Care heidae England and 2-Code Software Corn. In San Rafeel Culif

Oversen's V 400/MIMP enterest will enterest on Son Microsystems Inc's SPARC and IRSOs RS/8000 work stations. It will support both the 1984 and 1988 versions





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### Document faxing goes airborne – but will it fly?

On-the-road protocol may change by year's end as most major airlines will offer travelers the ability to send in ht favor and docume

Contact on Making Committee in Brookdale, Calif. "People don't use ithe phones I unless they absolutely have to "Airlines are battling to attract busi-Airtines are butting to attract businie want to use lantons on the sievreft

and Charleson Firestated Retail Orlandella. technologies: It easts them nothing because the ground-to-sir phone companior make their menor from users es make their money from usage. on during takeoff or landing - and thus ments, saud staties Bennett, en

Communications Commission has no Communications Commission has be tions Using them in this way "does not interfere with elected or enhant instru interiere with surcraft or onboard instru-

Company sixtings that are environment of Claireon Communications Group J. P. a 1.0 0 0 1.1 subsidiary recently said they will roll on RL11 phone inche to all their airplane phones [CW. Jap 25]

Meanwhile In Flight Phone Corn which pioneered air to ground commustreets and that US his and America Most Alekson and tested to District Flight ink comics in the backs of costs on all planes by year's end ICW April 12

PlightLink combines telephone data and fay services with a seat-back display corner Other customers include Comi val charter airlines and several international airlines. Luftbansa, the large German airline, has been testing the

#### Who needs it?

Information systems managers though said they see little need for these types

"I can't believe there are that many priorie in the world who have a critical need for that kind of stuff," said Glenn Jurmann, section manager of office technology at Baxter Healthcare Corp. in Deerfield. III. Jurmann pointed out that notebooks cannot be used during takeoff, landing or, meals, which together take up a significant portion of a typical

Wes Schaffer, senior information anabut at Citm Petroleum Corn in Tules Okla arread "Ourmous asse't dringfor this, it's not like they can't wait funtil the flight lands], and I'm sure the fees are hard to justify," he said

A Southwest Airtines spokesman said that domestic calls will cost \$2 a minute plus a \$2 connection fee. An In-Plicht spokesman said calls using the service will cost only \$2 per minute, although international rates differ. He said a typical data call will probably last less than 15

"It's still way too expensive, and I don't think a lot of people will use it." said An-



# Contrary to this is not the first step in im

Jeonic isn't in Companies somes America see being led to think they can't miss productions through workflow without razing their enterprises to the ground

Fortunately now there's Wana's OPEN/workflow software. It's by far the simplest way to tie workflow to all your enterprise's structured activities-including your legacy applications. So you can build on what you've oot. Instead of starting from the eround un The difference lies in our unique

client-server architecture. Unlike other solutions, we keep the application sensrate from the workflow, and make it easy to get and exchange information. That means you can re-engineer without having to recode everything. You can change your processes without changing your applications. And vice versa. And, since

Wang's OPEN/workflow software works with all your application tools of choice-COROL PowerBuilder", Visual Basic", you name it-you

can use the right tools for each process. Instead of mark of Presents Composition. Visual Beat "In a tendemork of Marriant Composition.

using the same tool for every job

Best of all, Wang OPEN/workflow works so



a process can make changes on their own. Without a lot of hand-holding.

And, knowing how closely top management

# Improved network gives insurance firm new life

n-1-2------

Matching up 2 200 remote PC pure with sestening up 2,200 remote r c users with nungreus of total telepoone numbers for Up to Booless was all summined all the lease and Co. They in the fact that the Milwan. have been present the lact that the sales deep loadingdets at a rate of 1 200 bit/see and

it became eight unit A uses on the derive to increase A year ago, the deade to mercan ity drive Northwestern from a 1 200 hit/see muhiir data network to an asymchronous 9 6K hittee single armher diel un custom The firm correlled its remore agents around the country into a ONTY DECAMOLE COST OCICAGO LIAGO IOCOT RC. cess to manager apparentous at treat

Hugh Moffman assistant director of in-Horman, assistant director of PERSONAL PROPERTY OF THE PROPE The results have been saving and better s and better network manageables ashiound the nonformation study was

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Today ATAT's InterSpen Informati today, A1 &1 % Interspen information Access Service (IAS) oners Horizmen ern agents a ton-tree, seven-digit numcompany offices throughout the U.S. company offices throughout the U.S. A tou-tree 800 number provides tree ac phie As many as 2 000 deckton and 200 nortable DC users ten into multiple dataportable PC users tap into multiple data ny's home office and at Robert W Raird & Co. the incomes's backeness subsidians

#### All anound savings

The single-number sum-on feature has eliminated local celling custs for mercommittee to a calling costs for every miblic data network via hundreds of local numbers or through general agents the had be and lines

A telephone mill allows Northwooforn ments to possione policy information look on records and effect changes by sook up records and elect changes by dresses or navment methods, variet the cash value of policies, get information on nolley loans and print daily reports. American slessomes electronic mall or renemit batch files prepared on the company's hard computers in Milwan. bee on Ametabl Corn 5000 1400 and an TOM TOOO M - 4-1 COOK

Regarding the need to migrate from 1 200 hit/ore to 8 6K hit/sec. Hoffman anid "Application development male were very much a part of the network project " Primary among these male www.improved.menorus.times.and.hatch throughout. The company wanted minimum control site imperment a network that had the capability and speed to handie wide fluctuations in traffic volume and a vendor that was willing to handle all network management.

#### Notimentall

LAS provides 8.6K bit/sec. asynchry dial-up connectivity over AT&T's packetewitched notwork A customized small cation developed by Northwest presents a menu of options as part of the longs process Depending on the month nick IAS senmiessly connects the caller In the 10,000 bours of connect time

with the appropriate company database loamed by Northwestern arents in Octo ber the average response time was less than six seconds in 97% of cases. LAS bills are based on the length of connection time, with no minimum session links or rounding increments.

Viscon ion Irre-lance writer in Milwarker.

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## opular belief, ementing a workflow solution

warehes the bottom line nowadays, we've also made it easy to champion the work management concept through your organization. Wang OPEN/workon key factors like cost, efficiency and productivity So why didn't company also think of this first) Simple. No one else is Wana

> No one else has such thorough knowledge of the office Of how people and And how to make them used better

No one che is a world leader in both imaging and client-server implementation.

And no one but no one has our degree of openness. Or the kind of scaleability to truly accommodate even

gigantic enterprises. For that matter, no competitor has

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flow cantures information about out of work as well as the time it takes-even for manual activities. Thus enabling you to demonstrate true impact

COMPUTERWORLD FEBRUARY 7, 1994 63

#### Enterprise Networking

day Watersales for his fater days of Madge Networks, Inc. Bill Introduced SmartCALIPhra an intelligent stackable

but for Token Ring networks. According to the San Jose Court --nany the product provider features for managing IRM-compatible multistation actess units and for remote network

Users can extend the allowable distunca between control access units (CAI) with built-in repeaters. SmartCAI Plus works with Maden's TrueView to report back to network administrators critical information necessary for tracking neparty important and monitoring ing network inventory and monitors

SmartCALI Plus costs \$2 995 Modes Vetroorks Amenage Nette

Avia Communications, Inc. has introdozed the NPS 650 multiprotocol Token

Ringsetwork print server. According to the Danvers Wass comnany the print server is powered by a 32his DICC parameter

Users maning TCP/IP LAN Manager LAN Somme or Norroll True 's Northlans and simultaneously share printers on a netthroughout and features two high-speed marginal ports and one serial port co. abligation to three printers to be exerced. adding up to three printers to be connected to the network at

The NPS 650 Token Ring network print THE PERSON NAMED IN COLUMN TO SERVICE OF THE PERSON NAMED IN COLUMN TO SERVICE IP will be available in March for \$705 -moco-monoc manaco COST TTT TOUR

American Bernan Commenter Com. No. Authoricals Power Conversion Corp. Das announced rowerset Sour Adapter for Voterate Management Protect (CADIC) management for the firm's uninterment

ble power supplies (UPS). Appareling to the West Kineston R I vennant the SNMP Adapter runs an SNMP agent that communicates to the SmartJIPS or Matrix JIPS through the IPSJ ink control language and over the network to a network management sta-

tion thousand CNMD Repetits of a Smart-IPS and Matrix. UPS with an SNMP Adapter include decknot and become appearing in creased centralized management and backward compatibility with existing Smart-UPS and Matrix-UPS

The SNMP Adapter coats \$300 American Proper Compension (401) 789,5735 The NPS 650 delivers 2,000K bit/sec. Ontical Data Systems, Inc. has an-

account the 1994 PTPO a birth poster montes are roomarie, a nightperior nut to Fiber Distributed Data Interface STORY being models for the left site but

to confine to the Richardson Town According to the reconstructs, reason, company, use 1094-Ear-O is a mign-perior-10Rese T compete married at 10M

hittage access to FDM running at 100M The new density commerces from what a first first The product occupies two saus in use 12-, seven- or lour-slot intinity chassis

and spatiales in Expenses repeated con-The 1094-EIFO is priced at \$8,900 Continui Data Systems **→** Uprical Dai

Complink Ltd. has announced Not-Switch PT a fault-tolerant version of its electronic-mail internation and transact tion appropriate and an

According to the Great Nock NV comners Ner Switch a massacra handling enviors beautiful the Y 400 standard and NetSwitch PT newide backhone agrees unit and enterest feelities for males and systems acroire providers and physical delivery devices including tolay and few

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mainframe-based applications NotSwitch FT was designed for critical Rese configuration prices start at

Davie Committee Contrara Communications Inc has intraduced Control Person 2000/F and

/5161 899, 1881

CentrumRemote 2000/T products based on an embanoid hardware platform and designed for Ethernet and Token Ring remote access to multiprotocol multiplat. form enterprise networks According to the San Jone Calif. comnamy both ContramRemote products puny, both Centrumicemore products by the Internet Engineering That Force for interoperability with security sys-

tems from a variety of independent vendore Peatures include an expanded mem ry canacity of 5M bytes, a combination of Such and normals tile memory for dynamic software downloading and rear nonel I/O slots that support four, eight- er 16port wide-area network modules for maximum configuration flevibility Pricing for the CentrupRemote/ starts at \$3 495 for a four-port confirmera

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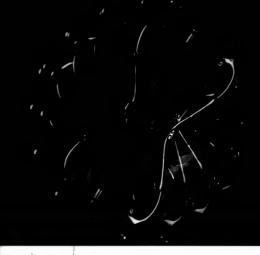
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# Fingerhut grabs early Unix SMP box

Runs apps on Sun SPARCeenter

Ry Joan S Bayman

Emerchat Cos. has stayed all the nurchase of a year rount frame to not tracte making a contract of the purchase of a new many traine of parting a manage of change over the formation of the first score of the 16-way Sun Microsystems. Inc SPARC

center 2000 symmetrical multiprocessor (SMP) The 16-way SMP machine want on line in Sentember and enserved full production in October, send Glenn Hubern, effort information officer at Financhat, a St 6 billion nutsing to taster The work load, which previously ran on an IBN ed on a Sun comprared to 200G, byte Gravele Corn distaltance The migration was less than silky smooth because of the need to work with early versions of Sun's Solaris 2 Soneral her coutem and Oncolo 7. Haborn and "It ended on being more leading edge than we wished, but we're pleased with the results " he said Bot the lack of this as sumport in the

Million and the same ....

- Hele comme of an Challeman server with the same SAP and --- to want out to Engly sonG-but a Oraria

) described and the storage. with so way SMD and and better of State for

neter enversion

900 openion/ ORGANICA COLORS pitches both Dage-scale Sun serven will have remeasion

wat have companion Audio testino ----IDM CS incom Models of a managed and

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maintely of byte

and him became chicaging SDAD contag NAM, with Waren Child care or gan supports or Consuming from the IMS dutabase to Greeke 7 was not a

trutal task and renorred the creation of custom code "We trivial rask and redouted the creation of castom costs. At the IMSI detabase and reload them in Drackel but it was not that senale "Habern said Instead the information extone stell wrote one set of non-reporture, that conicd data have debter from the 1992 and employees of programs. that loaded that data were thruck 7. The work of converting the Torsi bete detabase majorimento indoves, took about two

As a possible of the means the comment will not moved to wild to its three-mainframe data renter. Habern said "Oor good to get desert to been reconference, but that wen't human in The large Sen server, have to churn hard to keen up with

the date flow appropried by Kingarhut's mainframes "Wo are dearghets sen 15 million and 20 million batch undates a Finnerbut, name 79

#### Done deals: Conference attendees share strategies administration as the Toole Date Conter

D. The second Maddle

One more out his software ungrade fall by 00h becombinionethe free part Anoth Those wares come war stories presented at a recent conference aimed at helping exers become skulled negotiators.

Some 120 information technology pro curement specialists from Fortune 500 companies and macroment autoropes and have to show high took contract knowledge and experiences at International Computer Negotiations, Inc 's (ICN) 1994 Advanced Procurement Stratories Mastons Program

ICN a 19-year-old consulting firm in Writer Park Fla provides advice and semmars to belp user firms wrongle uptimal computer services and comment contracts out of such vendom, or 10M and Computer Associates International. Inc

#### Vendor battles

Among the war stories was the case of the state of California's Stephen P Teale Date Center in Secremento. The site which handles data processing for 256 state agencies, upgraded from an IBM 3000 Model 6004 mainframe to an IBM

The data center notified CA of its plans to unerside from a Group filtras Groon Sil machine The tetandia N.V. cofragament. ani responded with a hill for \$500,000 to allow the data center to run its software neckness - including CA-Ramus and CA-Examine - on the larger CPU, according to Jayre R. Henry manager of contracts

Dubsons about CA's proposed price hikes, Henry reviewed Teale's CA soft-

unite to \$47,000 Henry said A CA spokesman said, "It's over for that the problem was resolved."

ware licenses and determined that the company year purpopuble for only \$87,000 or ope-tenth — of CA's upgrade fees Upon bringing the discrepancy to CA's altention, the vendor "backed off" from its initial stance and even dropped upgrade charges no several products, bringing the ungrade costs for the multiproduct

something like this to occur. We're glad Henry was not the only attendee who speroscially played hardhall with a ven-

doe Carolina Tildon, management a victorius cently completed an IBM manuframe di country competed and for four description date contony that by expected to rout a 50% savings for each division. The conand savings for each presson the cononesce exceluste makes landed but your with an uncoefficil vendor replaced a \$9

million discuster recovery currices need Tilden said annivar ICN's Managed Acceleration Process methodologies helped Sara Lee in its negotiations, and addingt(C) conjugation sultant Frank Care not to the 30 nerves poststatist team

per to the surprised to ICN precepts that Sura Lee applied during the four-month barraiging procons included principlizing contract de mands before negotiations been and

warking upon tangents "ext" clauses into the acresment Each played a key rule in belping the company land the best possi-

## Pact pointers

ces offered dozens of helpful bints for dealing with information technology vendors, including the following: Ensure that software licenses de fine favorable locations for potential

litigation over nottware usage issues (breach of contract, convright infringements). For example, if your firm is in Los Angeles, make sure your contract atiquistes that all legal matters be beld in the Los Angeles area. Dog't take any chances with customined software that gives your orranization a competitive advantage If you need to discuss technical details with the supporting vendor. make sure your conversations are

conducted over an encrypted phone Equipment contracts about include provisions for customers to terminute the agreement if the product

vendor in question is acquired by an-➤ For disaster-recovery contracts. customers should include "nonper

formance" provisions in case hot-site vendors do not meet contractual obliestions (facilities are not excitable core applications cannot to be pro-

During contract negotiations with vendors, avoid disclosing itemized information systems budget alloco-- Thomas Hoffman blodes Tilder and "If we decaded to consolidate or out martin one of our date centers, We didn't went to be left holding navments on that

#### nert of the agreement is the said I --- t --- the fire mates Legal experts who attended said the non-

ularity of outsourcing agreements is and it is the second of the se The record and more results are recorded in nutseasons and third-party facility managers, it's imperative to have definitions for 'unerades,' 'usage' and 'enhancements' spelied out up front." noted Proof Franza, an attorney at Budd Larin Short Hills, N.1 Frenze represented First Fidelity Bancorn in a breach of contenet law-out against CA that was seltled nut of court last year "Contracts must stimulate that third parties have and be granted access to software

Michael J Cammarota, a senior attorney at Interruted Systems Solutions Corp. in White Plains, NY., who chaired several outsourring conference aresions, offered advice for bargaining with facility managers and software yendors TA is affeoid of otteneting negotive publicity, and that can be used as a needial me nount on software because if done fairly and countably," Cammarota said. Joe Aver If N's president told confer

ence goers that most vendors are apt to bend" on component and services con teact negotiations to expende last-map ute revenue as they near the end of cortain form quarters. Still, he warned of the dangers of geiting too "chummy" with vendors. "If you invite on-site vendors mio your secure areas, open up your proprietary information to them and let them play on your corporate vol leyball team, you can't expect to be able

#### Software provides report cards on doctors' bills

D. Mich Don

When become and books maintanance when meaning and neural mannersance has a notteen of unusually high changes the typical response is "Well my ontions are ricker than other dectors' ma-

But that argument is being challenged but that argument is being enumenged adjusts the law data from the committee of till normal and provides more meaningful nesses and provides more meanings

Vendors of this hot enterpry of software which downtails with the Clinton administration's plans for "report conde" on bookh care providers include Gards on neural care providers, include ine in Malvern Pa and Value Health

The latest firm to jump into this niche is Boston-based Health Payment Review Inc. Last month, the company introduced Patterns of Treatment Plus which produces a variety of proofs that company a physician's practices - adjusted for a physician's practices — adjusted for accordity — with a well-respected data. base of clinical guidelines.

For example the suffware can unot doctors who order more tests than the clinical enidelines suggest or who submit evenuelve claims. The flin side in that the software also identifies doctors with a nattern of high-quality cost-effective

The software is available on IRM main. frames AS/400s and BS/8000s as well as Herwiett-Packard Co. HP 3000s. Digital Equipment Corp VAXs and IRM-compaithis PCs. The price range from \$50,000. to \$500,000, the vendor said

#### Brief

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celled Patterns of Treatment is undated cased ratterns of freatment, is updated

ed medical practice Vio Ortonami, assistant vice nascudent to according a manufacture view president ance Co in Indianapolis, already uses the Datterns of Tweetment detabases were ning on an IRM 2000 mainframe for ret-

tions Sylengel said he plays to add the Discompany in the fourth quester of this year to fing cosmolous claims before they

rt paid.

The sensitivity of the profiling software can be adjusted to find claims concalcred opestionable by say, 100%, 90% or 70% of a doctor's neers. "When you tell keens lid on rising doctor hills

- destruction 2000 to 2000 of his colors sider it a had practice that's pretty persugarity." Sztengel said.

Will physician profiling replace the was payseens proming reputer the eurrent practice of utilization review, printeness of particular treatments? No Sytometrical because managed care or the region and the region of the control of three techniques - profiling utilization review and full-scale "chart audits" — to



## IBM considers upgrade to old System/36

The first PersonPC-based system to be the first rowerry-based system to be supper by the s regree but some may not be an AS/400 per se, but rather a new that industry sources said IBM is considoring introducing late this year The stand alone how would likely be

To a self-reference of the December Server AS(400 models due in 1905, nomedianto industry sources. IRM prohable would provide ungrades from the Sentem 76 model to the AS/A00 they added IRM is reportedly looking at a Novemher chinment of the System/98 unit althrough courses noted that plans have not

Produce The bond on the country of the little 1968, the same year the AS/ASS came to manhat

William Zeitler survisioni deperal manages for AS 400 marketing mountly said that it is "comewhat likely" that "market energia" systems name floor anDC obline will be made assistable design the female amount of this course

Claus Van Bunnshoten systems prodthe AS/AND Division and manager at the Action Divisions. would not say hast week whether a sys-IRM has not committed to providing the Described to providing the the current level of System 76 compatibility That requires applications to be recompiled and in some course resembled

Monopole of the fair to one that make having what if discussions with 1900. naving what-it docusations with Jaystem Sojeustomers as to what their wants and needs are." Van Benscholen said. The 200 000 attempt System 55 metalled have remains "a very important part of our franchise "he noted

#### Giving in

Nell Young on anabout at Mata Gazen Inc. in Westport Copp. said some Statem/36 users have been "very forceful" about wanting to continue with that machine's SSP operating system and command in a

TRM is finally throwing up its hands and saying it will give them more nower."

"When the AS/400 first came out IRM procured that System 76 years more tust soins to whip out their checkbooks and migrate said Jamie Crump, creek dont of the Dishwell Cooper a Distancilla Ga, consatting firm that uses a Svatom/NE She noted that IDM has had "a kindof change of heart over the nest wear

and a half, which I'm very glad to see Crump said she would be most inter ested in running System/% untilentions dimeth: on a BoundPC based 49/400 on the mirrotion process could be done "at your convenience. From a cost-justification basis, that would really give you the

host of both worlds However, Cliff Beckwith, senior systems analyst at York Insurance Group in Westbrook, Maine, said his company wants to move off the System (36 by year's The AS/400 is an uption, but the migra-

tion choice will be driven more by the anplications software that York Insurance settles on Reckwith said "We see the 1System 201 embitecture as kind of at the end of its life ? be said. Diamen Assess

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# Feds moving data to CD-ROM

# Advantages of CDs outweigh magnetic tane by weighing less storing more

Deflow H tather

Vian Densident At Gore care referred to them as "siles of rotting data" - govern them as suos or rotting data - governreniaceable information on millions of adjustmamatics

Now enabled by improving technology and plunging prices, federal area and pringing prices, rederm agencies are moving from magnetic tapes to CDs for data archiving reniscing a medium with a shelf life of 10 weets or so with one that lests five to t0 times as long. At one NASA facility 200 magnatic tanco a dov are being copied to CDs.

Jerry McPaul, a computer scientist at the U.S. Geological Sugary (USOS) and founder of a management CD BOM seems aroun (see story helow) said he saw the notestial for CD-ROM a decade are, but the technology was just too coully for

widespread use. Now he said systems Martin project engineer. Even with new able to resta CTs (called CTs Recordable tanca one in court 10 to 20 is defection in as CD R) which some select at \$100,000 company based "But no prose find do in 1969 can be had for as little as \$4 000. If 1960, Citie or use on me user an experience "we expect tast to be naive

McFaul said CD technology is inst mendaging use in data architics, each adopters turned to it for cost sessions in ating large databases to the public. For example, an oil company with a truck and a check for \$55,000 could buy from the USCS 95C before of pairmin date. on 840 tenso. Non-a molecular material with a shoe how can have the same thing

#### on 29 CDu for \$1 249

NASA's Jet Promision Laboratory in Pendene Calif inconvertion 83.000 aus. instance to CD-R and is finding problems with almost one tone in 10 said Mike

Chip off the USGS block

ed STOCAT to seed Gary R. Anthes

ctiveCDs, never."
While NASA is not not CD. P. technology for data analysis ing because it is more outeffective for making just one

we 240 000

of two conies if uses CD. DOM technology to make copies of data for high-yeland the balance of the sale to The agency is attaching two CD-ROM jukeboxes to the Internet and the july-

oftest seed boxes will soon make more than 2500 bytes of date around the world The advantages of CDs law and husb data density

case of creation and rat dom-access retrieval - work together to enable fundamentally new kinds of seientificanchinos said Carl Shoton done ty chief of data management at the USQS'

Demons office for example Abeles com hined onto a single CD data shout momagnetism exemic pass and tree rings for the National Oceanic and Atmospheric Administration That enabled scientists to ask questions such as, "Is there a correlation between elimate [tree ring] data and ionombaric data?" he said "Before CD BOM N small bear been

very difficult to acquire process and compare all that date " Abs. ton said "Now scientists on see completions of dissimilar data never seen beform A smeat number of die sore. A great number of disway"

My. Abition sens the Cour put high-resolution color photo member of natural dispetant such as carthonekes wice none sink holes and the like Description and debte to the nubile from a growmment it. bream at \$10 cook all 560 pie tures can now be purchased on CD for \$22 he said

"Taxmayers pay for all this research but they seldom get a chance to get their hands on the moults of that mounts Abston said. "Now they can get it."

#### Fingerhut

CONTINUED FROM BACE AS

day to those [Oracle] databases " Rab orn said "We divide the transactions into 14 (ich streams) and run them concurrenth," on the Sun server

The benefits of the linky system were immediate anid Betty Botheroon penior vice president of consumer corporate and antisonmental affairs at Finmerbut We can give our encloseer, more now rate information more quickly and it has also given us a factor order toking rocess," said Botheress, who oversees telemericating operations. Staffers onn now years multiple detabases on the Cur and the manager denomination of the

But because there was a large uniform cost - 20-way SPARCeenter 2000s are priced at \$1.2 million — IS servines were not immediate. More morale were added to the 500-plus IS stati so tend the large Sun servers, including two installed at the corporate data center in St. Cloud. Minn. 70 miles from the firm's boadow ters, and two more will be installed at a Fingerbut telemarketing center in the Minneanolis suburbe

The payoff from the move to Unix servers may come later when the firm can avoid future mainframe purchases, Hab ern said. "At some point, there was going to be one person too many [to support]. and that would have caused us to ungrade with a \$30 million mainframe," he said in contrast, all four Sun envers can be approaded to 20-way SMP machines and outlitted with more memory and disk storage They can even be clustered This way I can have a much smoother

peremental increase in costs, rather than ereat big steps "Habern said

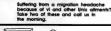
Pingerbut's downsiving project bear in January 1986 and grew to include a crew of 75 programmers, including 40 inhomes personnel and 25 outside sonsultunts. In eight months, the company's IMS-based customer service and order processing applications were ready for the switch to the 16-way SPARCounter

2000 machine and another 10-way Spanicampter 2000 Habern said The servers anchor on-line applications for 1:000 customer-service representatives During the Christman season the gyutem allowed 300 staffers to be trained as iemporary customerspervice staffers in free house Henelly training to handle customer calls takes more than 15 hours

Those 300 staffers "took about \$2.5 nillion worth of orders." Bothereau said go to a service bureau.

Half of the new system's users at corcornte bendouarters are logged on to the 16-way SMP system, and the other half are logged onto the 10-way mechine During the initial startup, the other [SMP mechine] was kind of a cold backun." Habern explained. The goal is to have a mirrored set of Sun pervers at both telemarketing centers. By June, the 16-way server's database will be renilcated on a companion server, and two 10 way SMPs will be in place

mides the SPARCrenter 2000 serv ers, there are about 20 SPARCstation to file servers that host user applications at Fingerhut. There are also roughly 400 Sup SPARCelassic workstations, along with 700 IBM 3270 terminals. To pr Fingerbut's investment in the IBM 3270s. tom code was written to allow them to display Unix applications and data hosted by the Sup compar





# White Paper



# **Groupware:**

Changing Business for the '90s





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"Groupware was created to enhance collaboration, communication and interpersonal productivity. Whether the product is e-mail, workflow or conferencing, groupware is providing solutions to specific business problems. Experts predict that by 1998 groupware sales will reach \$5.5 billion."

This White Paper is written by David Coleman, conference chairman, GroupWare 94, and a principal at Collabouative Strategies, a San Francisco-based consulting firm focused on workgroup computing.

Mr. Coleman can be constacted at 415-282-9197. For more information on GroupWare 94, call 800-247-0262.

For more information on the White Paper Program, please call 508-879-0700.

#### Introduction

The economic expansion of the '70s and '80s has given way to the global recession of the '90s. The mixture of this declining economic atmosphere with an increasingly robust international communications and technology infrastructure has crested a feecode convention along has been exponented.

In this environment, downsizing and organizational restructuring — a.k.a. redesign — have become prominent trends. These concepts, which are targeted at increasing productivity, are being widely discussed and implemented in many companies.

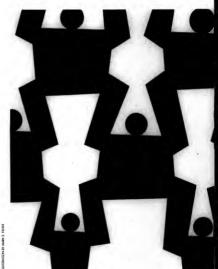
But these trends are not the only challenges facing enterprises in the '90s. Increased quality, better customer service, lower product prices, greater employee autonomy and more flexible and responsive organizations are all on the samula.

How are today's innovative organizations coping with these diverse pressures and, in some cases, thriving? How are these organizations staying competitive! How are they realizing high qualiity, decreasing time-to-market and reducing costs? What technologies are being implemented to achieve these goals? The key to these questions is groutoware.

Groupware is the term loosely used to describe a group of technologies that mediate interpersonal collaboration through the compater. As is the case with so many technology buzzwords, it seems there are as many definitions for groupware as there are people trying to define it. For purposes of this white paper, Collaborative Strategies defines it as "Computer most direct collaboration that increases the modulariotist or functional production of the compatibility of the contraction of the contraction of the compatibility of the contraction of t

"Computer-mediated collaboration that increases the productivity of functionality of person-to-person processes."

No matter how it is defined, groupware was created to foster collaboration, communication and interpersonal productivity by automating many tasks and enhancing the efficiency of others. Whether the groupware grouduct in question is e-mail, workflow or something else does not matter. What matters is providing solutions to specific businessy problems. This is what groupware does in a way that has propelled it to the forefront of cuttingedge technologies.



Groupware is not a new idea. Many of the technologies that compose groupware have been around for 20 years. Despite the availability of these technologies, however groupware never took off in the '70s and '80s because the network infrastructure needed to support it was not there. However, the infrastructure is now in place, and businesses are using groupware or estructure themselves for global competition.

Just as the groupware market is emerging, different classification schemes are being used to size the market and

position products. Current groupware Groupware: product categories are going though a Changing cycle of expansion to meet the growing **Business** for needs. For the next two years, many new the '90s products will become available in all groupware categories as vendors rush to fill identified needs. However, as with most natural and economic systems, expansion today usually leads to contraction tomorrow.

We at Collaborative Strategies believe that the product offerings in the groupware category will increase, but the number of categories of products will decrease as users become more sophisticated, standards develop, and the market matures. Su 1996 these should only be five categories for groupware products: E-mail/measuring including calendaring and scheduling

 Group document handling, including Experts predict workflow, document that hy 1998 and image management and enoun editing

arounware cales Group decision syswill reach tems including audio es s hillrow and video conferencing eroun devision support

systems and shared screen products · Workeroup utilities and development tools, including GUI development tools and enumeror mainte nance and development tools

 Shared-database products on cluding Notes. Oracle Office and shared-memory products.

In an attempt to delineate the true groupware market, several market research firms track the cales of the technologies that are most commonly associated with eroupware. including e-mail, electronic conferencine and workflow. In a recent so nort. Bob Flanagan senior analyst at Workeroup Technologies, Inc., estimates the market for eroupware software to be \$1.7 billion in 1993.

He forecasts rapid arough for this market, predicting that by 1998. rates will be \$5.5 hillion worldwide This downtails micely with the fig.

ares reported by the British market seconds from Owner 11d In its me port, "Groupware: Market Strate oies." Osum states that the groupware market is ormeine at a robust 15% a year. Like Workgroup Technologies Ovum also predicts the total group ware market will reach \$5.5 hillion by 1998 And 60% of that \$5.5 billion figure will consist of training and implementation services rather than software sales (Figure 1). That per-

software sales consume a larger and larger portion of the market One state that are third of the 1993 eroupware market is attribut able to the cale of workfloor coftware and services. The firm also says that the stand-slone e-mail systems that

today comprise 19% of the eroup. ware market will only account for 10% of the market by 1998. This suggests that e-mail functionality will be integrated into other technologies like workflow, calendar, ine/scheduline or eroup decision support systems.

#### THE POLE FOR GPOLIPWAPE SERVICES

There are many challenges to neowiding groupscare services. Many consultants become discouraged because even though the technology is adequate for the organization, many organizations do not want to change the way they work

Nevertheless, firms such as Andersen Consulting provide a wide variety of groupware services to their clients. These services include plannine consulting implementation custom application development organizational consulting, change centrare will change riunificantly as management, business process redesign, and meeting facilitation.

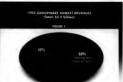
Attendees at GrounWare'93 were asked what services were needed that the software vendors were not providing. The most requested service was planning. However, this is not a service that the Lotus or Microsoft consulting groups generally provide, Their consulting is usually focused on implementation services or custom application development.

In general, groupware consulting can be very profitable. Lotus Consulting makes \$3.55 for every dollar of Notes sold. However, the need for planning and other consulting services to help integrate groupware into the organization is often filled by consultants of another breed. such as EDS, the "Big Six" or even management consulting firms such as Mackenvie Inc.

The reason these firms are becoming a major channel for groupware is that prograware requires software, customization, and oreanizational and change management consulting. Because every enterprise is different, there is no one firm that can provide a complete groupware solution for a large organization.

#### FORCES DRIVING/INHIBITING THE GROUPWARE WAVE What forces are driving group-

ware market growth? . The improved price/performance



Wer 1996, reference spin will consume a latter and larger system of the median

of both groupware hardware and coffmum has made it more mailable to a larger population

 The worldwide recession and downsizing are driving increased white-collar productivity

 Well known vendors such as Microsoft WordPorfect Lotus IBM and Digital Equipment Corn are eromoting groupware products and increasing awareness in the marketalace

 Increased competition is requiring large organizations to change and become flatter and more flexible. processes often requiring groupware The increased complexity of today's products and business procodures is driving the use of ad hos

teams supported by groupware There are also equal and opnos ing forces that inhibit the growth of

groupware. These include \* A general lack of education in the business community about group-

 The marketplace is confused as to the nature of groupware, and much of the information distributed by

groupware vendors has increased this confusion . The recession is decreasing budgets, and many firms cannot afford

Eroupware The distribution channels for groupware are new and not fully implemented

· MIS shops worry that they will become dependent on a single groupware vendor · Organizations are resistant to

\* There are few groupware standards to foster rapid growth.

When 500 groupware users were surveyed at the GroupWare 93 Conference about their success or failure with groupware, those that were not successful noted that their greatest problems were not with the technology but involved the absence of support from top management and the lack of a specific business problem adaptable to the technology. The



and the same of th

ment is a hot one and will be debated at GroupWare'94 in Boston (Feb. 27-Mar. 21 NETWORK ENVIRONMENT

Where does groupware sit in today's enterprise IT architecture? It lies on a network infrastructure which includes PCs. PC operating

systems, cabling, network operating systems, administration utilities and the phone lines for a WAN (Figure 2) Groupware is part of the networked application environment However, not all networked applications are groupware. Access to a corporate database through a network may not be groupware. However, in-

teractive or discussion databases may be part of a groupware application. Often, groupware applications are workgroup-oriented and not enterprise-oriented. The issues involved in scaling up these applications for a multinational

issue of support from too managequently require the cooperation of competitive vendors the establish. ment of standards, and maturation of the supporting infrastructure. Many of the requirements for "enterprise-ware" are not yet available. Groupware rests

at the top of a big The greatest problems wave that includes technologies such implementing as: client/server. graultware are multimedia, docuthe absence of top ment and image management, netmanagement subbort worked applications and the lack of and distributed/mo-

bile/remote comappropriate business problems. Organizational

trends toward flatter organizations, decentralization and outsourcing are being reflected in the information technologies that businesses employ. The rapid growth of networks and the decline of legacy systems has managers searching for ways to amortize their



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SOFTWARE FOR BUSINESS SOLUTIONS



#### **Current Groupware Product Categories**

Electronic mail and messaging

Mail (Microsoft), DoVinci Mail (DoVinci), Beyand Mail (Beyand), MHS (Novell), Futurus Team (Futuru), Fris/Class (SafAc) Issues Standards, XAPI, VIM vs. MAPI, X 400, X 500 (directory services). How is if possible to deal with mulsible and pathent in one antercostal.

Shared-screen products Sample products. ShowMe 2.0 (Sun Solutions), As-

pacts (Group Technologies) Issues: Who controls the screen? Whot are the interaction/board rates? What is real-time response? Is your equipment compatible? How many people can conference efficiently? Is it necessary to meet in person? Is a forlitative neader?

Shared-memory products
Sample products: Latus Notes Hatus! Oracle Office

(Oracle), WordPerfect Office (WordPerfect), LinkWorks (Digital Equipment) Issues: Replication schemes, network topologies, scolability, transaction-based vs. store-and-forward databases, surport for worldwide perconnobies, interaction

Calendaring and scheduling

with leggcy systems.

Sample products: Meeting Maker (On Technologies), Network Scheduler 3 (Powercore), Time and Place/2 IRBAII

(IBM) Issues: Possible proliferation of meetings because they are now easier to schedule, privacy of personal calendars and time (big brother is watching). Having enough people in the company using the product to make it worthwhile. Scheduling across multicle time zones.

Group decision support systems

Sample products: GroupSystemsV (Ventona), Vision-Quest (Collaborative Technology Corp.), Council (Co-Vision) Issues: Do they integrate with scheduling systems?

Issues: Do they integrate with scheduling systems? What to do ofter an electronic meeting? Can you put the resolutions into Notes or other products and track gools and commitments? What is the role of the facilitator? Are facilitators necessary for this technology?

Group editing multiple product and service ver Sample products Face-to-Face (Crosswise), Mark-Up be successful for a single client.

(Mainsley Softwore)

issues. Why is this product category not useful? What have specified in the second of the second of the book page mankey standards such as SGM, and CALS Will it support common word processors and page loyely programs or does it require the use of a special additor? Does it have version control? How does it effect document security? How does it may be second or second or second or second or or remotion?

Workflow

Sample products: ATI (Action Technologies), WorkMan (Reach Technologies), Jefform (Jefform), FloMark (IBM) Issues: Workflow coalition, Passing documents and internation between products. Is it worth automating poor processes?

Document image management Sample products: FileNet (FileNet), Plexus (Recognition Technologies)

Issues: Stondards, obtaining group occess, version control, security, dato integrity, compression, integration with other documents, repositories, integration with standard desistan ward processing and prous edition.

Workgroup utilities
Sample products: Workgroup for Windows (Microsoft).

Issues: What should be part of the OS and what should be part of the application?

Groupware development tools Sample products: Notes (Lotus), Oracle Office (Ora-

cle), CoEX (TwinSun)
Issues: What OS, GUI and network to develop for.
How to insure issuer compatibility? Standards, objectoriented (reusoble) code, licensia, (network, multimedia, intellectual property rights).

Groupware services

Service listing: planning and implementation, application development, training and maintenance, business re-engineering, process re-engineering, meeting facilitation issues: Expertise is a most valuable commodity in the

Issues: Expertise is a most valuable commodity in the groupware market. Hoving all the expertise you need in-hause in unlikely. No are vendor offers a complete groupware solution and re-engineering often requires multiple product and service vendors to collaborate to be successful for a single client. I ANs so well as discover a use for old mainframes that have been paid Grand an still functional

The desire of companies to tie in unabless or customers has lead to organizational extensions that include these two groups as well as ad caude these two groups as well as au ented and cross corporate bound-

Many organizations have realized that they cannot be all things to all people. They have discovered that the best way to stay competitive is to focus on what they are best at and deliver it as afficiently as nossible This enecialization means that in order to provide a complete groupware or business solution, many oreanizations need partners and must enter into new alliances to meet

these demands Frequently, the structure of these alliances is awkward because the inte-

eration of two very different organirations can be painful There is no set Consult to fellow Harmon because groupwate promotes communication, it can often provide a solution

la essanca arouneste provides the competitive olue of the '90- Is provides a way for organizations to remain flexible set fast on their fort. a way to stay focused on the customai while connecting the external salesperson; and a way to provide all employees with the greater information and autonomy they need to be more productive

#### WILL ALL SOFTWARE RE GROUPWARE IN THE YEAR 20002

When is enumerate enumerate. and when is it something else? The groupware applications that we are starting to see may not be sold or even tracked as groupware. Similar

to antificial intelligence programment has the potential to become ubiquitour but hidden

For example, e-mail support could be nushed down to the operating system level Geoutwate may

This would have ad vantages: it would construelly. make messarine mailable to all applic cations it would nrovide a common

encompass all combuter applications directory structure. and it would help to

establish messaging standards. This is also true of database functions, we have already seen the beginning of these trends in some of the evolving Microsoft operating systems. Also, Unix has always included calendaring and e-mail as part of the operatng environment

Sometime toward the end of the decade groupware may evolve as a



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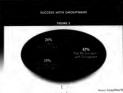
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a and their recognitions and security of

term to encompass all applications. as all computer applications may then be group-enabled, workflowenabled or have support teams on a network This means that enormware may no longer be useful as a term. So will all software be groupware in the year 2000? The answer is yes.

JUSTIFYING Even if groupware GROUPWARE technology is Selling groupware to manage-

proficient, the ment is a challeng. implementation ing task. Often. executives demand will not be cost-justification for successful if the these expenses When groupware is corporate culture

does not support it poorly to areas of low payoff, it cannot he cost-instified. This may be the case with elaborate financial accounting systems, where it is laid on top of existing inefficient practices in such a way as to negate its effectiveness. Even if groupware is imple-

applied and applied

poorly, it will still produce disappointing results (Figure 3). A second reason for the difficulty in selling groupware to management

is that its greatest benefits are often comble in traditional ways One mer that found this out is Bullivant Houser, Bailey, Pendergrass & Hoffman, a Portland, Oregon law firm. Bullivant uses groupware to re-

duce legal fees and communicate with clients "Clients often want reports at periodic intervals," notes Don Evans, COO at Bullivant, "This is an expensive process for the dients and time consuming for our lawyers Rather than reporting to the clients on a regular basis, we can change the process by using groupware and enabling the clients to examine the documents in the work. ing file or database to see progress.

bills by 20 percent." Bullivent invested \$250,000 on Lotus Notes software and in building a suite of custom applications to support its lawyers and clients. Training costs were low because the firm spent considerable money up mented correctly, when managed front making the software easy to use, but maintenance and support costs were running up to \$100,000 per year. Savings based on the

This means the reporting time eoc

away and the client can reduce their

\$50,000 through the elimination of redundant data entry in 1993. That number is expected to reach \$75,000 durine 1994

Despite these impressive harddollar ravings Bullivant feels its biggest groupware benefits lie elsewhere "The higgest benefits we have seen from this system are the intaneibles," explains Evans, who maintains that involving clients with the process makes a hig difference "We can now measure how lone it takes to excelle a metter which has raised the level of cost consciourners on the client side Clients want their problems resolved quickly and inexnensively This system lets them track progress and see how well we are doing

#### The Groupware ROI

intensible and therefore not mea-Dramatic productivity and ROI results were reported by Lotus in a 1992 study done on 39 companies using Lotus Notes for a year or more on networks of 200 or more nodes The study reports a minimum ROI of 15 percent. This pales when compared with the impressive average three-year ROI of 395 percent. Even more impressive is the typical payhack carde of three months

If hardware costs are included. the payback is humped up to four months, and the ROI drops to 197 percent. The study also reports a 200% productivity improvement in the application development cycle by IT managers

The ROI in this Lotus study was high because training, coosulting and maintenance costs were not included in the initial, or ongoing investment. And initial software costs were balanced against the productivity gains. Even taking all these costs into account, many organizations have found that the use of Notes catalyzes' business restructurine and supports improved productivity gains while providing a significant ROL

Lotus Notes is not the only

groupware product with proven productivity mine Charron Pine line Company's procurement services group used Ventana's Group-SystemsV to develop a tree diagram for all procurement activities wish. in Charmo. The procurement team documented the process results and found that it was able to accomnlish its goals in half the time while realizing \$5 million in covings on a eroo oon investment

Snalding Sports Worldwide faces a faddish market where quick resnonsiveness is critical to success Spalding uses Keyfile's image management software to streamline the

derion implementation process Our joitial software investment of \$100,000 paid for itself overnight," says Spalding's H. Oldham Brooks "We were receding \$85,000 a ware in convine mailing and distributing product specifications. But more importantly, it used to take us a year and a half from device to full implements tion. Now once the decime are in the system authorized users anywhere in the world can examine comment and access these days ments instantly

This project has been much a mocase that Smalding is more using the software in all of its major departments and is experimenting with using it in its eleven foreign offices.

#### Groupware Gains

In another example of groupware being used to increase both

functionality and productivity, the IIS Army's Redstone Amenal wad Ventuna's electronic meeting soft. warr in a variety of military situs. tions and showed a 71% decrease in meeting time. Ownell calendar time required for meetings decressed 91 nervent

And in an inspiring example of business process revengingering using grouperess the Secretory of Defense commissioned a group of 56 Army Navy Marine and reservist logistics experts, 15 support nersonnel and a four-nerson mancomment team to construct a next automated logistics systems model for hattlefield commander. The original model took over 19 months and \$3 million to construct. Its groupware-based succes-

#### 20 Rules For Success With Groupware

Looking for some help in getting your groupware system up and running? The following is a list of 10. No one groupwate product can do it all 20 common-sense rules that may give you an

 Find a groupware champion. The higher up in management, the better. Get their hands on the keyboard. By getting top management involved they will see the ben-

efits, and you will get a lot mare support. 2. Groupware changes the corporate culture. Plan for it.

3. Pick a pilot project rather than trying to roll groupware out to the whole arganization. 4. Pick a bounded project with a group that is sup-

portive of bath technology and innovation. 5. Pick a project with visibility and financial impact. Measure productivity factors before you start the

project.

7. Measure productivity factors after the project has started. This is a good way to cost-justify groupware 8. Select groupware software based an a specific business problem that has not been solved successfully using traditional methods. Corollary: Do not pick the groupware befare finding a problem for it to

9. Make sure you have adequate planning, support, training and maintenance for your project.

11. Don't expect software vendors to offer you all the services you need for groupware. You may need to use internal neonle or consul-

nts to insure your project's succ 12. Groupware is not a quick fix. As part of a re-engineering effort, it may take two

to four years to see the results 13. Listen to the people involved in the pilot project. They are-experts on what needs to be done and can often suggest ways to improve the

14. Don't be afraid to make changes. A pilot project is an experiment. Learn as you go.

15. Make sure the software you pick fits with existing systems. Try to amortize your LAN investment by connacting to your mainframe or other legacy systems.

16. You can't change people overnight. Be prepared for recisionne 17. If people take time to change, organiz

toke even longer. 18. It takes courage to change a corpore Apploud those that are willing to change.

19. Be careful about paving the cowpath. There is no point in automating a very inefficient process. 20. Groupware can be very political. Make sure it is



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sor was completed in three weeks at a cost of \$300,000.

#### TECHNICAL AND ORGANIZATIONAL CHALLENGES

The two major challenges to groupware are technical and organi-

The integration of groupwate with legacy systems is a challenge bring challeng

addressed today: even if groupware technology is proticient, the groupware implementation will not be successful if the corporate valuate does not support it.

The following case studies on Pacific Gas & Electric (PG&E) and General Foods demonstrate how two companies have overcome technical and organizational barriers to

#### Pacific Gas & Electric

PGGE is a large west const utility with 20,000 employees. It has fared well in its efforts to integrate group-ware with its legacy system. There are several reasons for this. Most importantly, it had ample time to plan for the impact of chemisteror and applications, and the construction of the constructio

PG&E based its groupware applidations on a LAN-WAN. client! was server architecture. These application mainframe data. In most cases, when users need to locate that data, they cut and paste from their 3270emulator to Notes on the same conmonly used by individual users, it can be enhanced to the contraction of the

PG&E has almost 20,000 nodes on ate I AN/WAN including Macintooles PCs and Univ serristations The PC's and workstations are largely used for electrical planning, estimating and new business proposals. More applications are bring created for this client/server environment every day. In order to facilitate that growth Lotus Notes has cutrently been rolled out to 3,000 nodes. That software is being implemented slowly in accordance with a technology life cycle plan that details the full costs and benefits of Notes This plan includes a number of



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administration and operational support

security
 retirement and migration to new

technology.

PGEÉ believes in involving cecyone carly on in such fas-reaching projects as its groupware implementation. That is why it created a 45-page document detailing technology transfer at both the local and corporate level. These efforts paid off prior to the groupware introduction when, in 1987, PGEÉ began planning and implementing its

10,000 of the utility's 20,000 --plowers were up and running on the The aroumeure rollout has been

similarly well managed DE&E is currently using Banyan's Intelligent Messaging for its cornorate e-mail system and its workflow anniu ations will also be based on this mail nlatform Although PC & E has found moving to a chent/server erounware based I AN-WAN on tcomment is more expensive than relying on mainframe technology, it has also found the new emissionment

to be much more functional Art Beckman, manager of client poort services, is in charge of the I AN/WAN network. According to him. "Price in comparison to the mainframe is not an issue. How do you compare prices when there is both new and increased functionality on the LAN?" Beckman's advace to those looking at groupware for their organization: "Stay away from multiple platforms. A standard stable platform to build your groupware applications upon will save you time, money and lots of headacher'

#### General Foods

General Foods provides a good example of overcoming the organizational challenges associated with groupware. The corporation has 4.000 people at its headquarters in White Plains, N.Y. Prior to implementing groupware, trying to schedule meetings at that location was not only frustrating, but an out-

right waste of time The situation got so bad that Bob Sickles, systems manager for the 110-person Dinners and Enhancers division, chronicled it by creating a video called "Nightmare on North Street: The Scheduling Monster." This humorous, 20-minute video detailed the frustration and mefficiency of scheduling a meeting at General Foods. The video was just

LANGWAN network By 1991, one of the things Sukley did correctby to the course of any extelly integrating organization with the mainframe-based legacy system at

> Another was realizing that sucone often errors out at fulure Euro search and General Foods transfer amplement an electronic scheduling quest contact ---program with PC chents and a VAX control is tooled missochly. "In contoo much of a behavioral change. notes Seekles "Boonle were not used to having their PC on and running scheduling software the whole day Now with e-mail so to enread ounckly prevalent, keeping the PC on is standard - if you are not on e-mail you

can't do must sob General Fonds uses Microsoft Mail for its cornerate e-mail communications. The company has bad a 110-node I AN Manager, Token Ring network consisting largely of 386 and 486 PCs running Windows. for two years. Sickles's donaine was one of the first to be up and run-

In another correct move, Sackley found a top management champion - Irm Cook, who is responsible for both Total Quality Management TOM) and Information Systems at General Foods - to back the use of Network Scheduler 3.0 from Powers

Suckley real-read that he soould have to change people's behavior. over ome their fears, and train them to use the Network Scheduler 3.0 system competently in order to have a successful scheduling rollout. One way he did this was by gaining supnort at both the staff and secretarial evels. In so doing, he made sure that the middle managers who would use the scheduling software heard good things about it from

both above and below Sickles specifically asked the staff about its anxieties. The most common ones were loss of control of personal calendars, and a fear that people would be inundated by meetings because they would become co mercina colombia

He assuaged these fears with a two-proposed strategy Einst ha rolled the product out in a physical manner and instally restrated at to specific functional groups. These groups were strategically selected broad on their fra

Groutware other employees in reasures changing the demine This poople's helianar allowed news of checose with the and avercaming their fears

The second part of the plan involved publicizing the project's succres. Sickles wrote articles for the company TOM newletter describing how ever the software was to me and how much time at saved during mitial pilot tests. Again, the good

news sperad muckly. With all the organizational hassles behind him. Sickles had only to deal with technical problems during the actual implementation process All of these problems were over-Sickles is part of the company-

wide TOM effort, and in the spirit of TOM he did a survey before and after the implementation of electronic scheduling. He found that the total elapsed time needed to schedule a meeting using Network Scheduler 3.0 was reduced by 7.0% from 5.1 hours to 1.4 hours. He also found that the average number of minutes actually spent in the scheduling process was reduced by 71% from 19.5 minutes to 5.6 min. rates. Browned by its success with call endarine. General Foods is evaluating Lotus Notes, various bulletin board systems for accessing market reports, and an on-line clipping

When asked about his secret to success, Sickles states, "The TOM focus on measurement and the customer, as well as thorough planning helped us in the long run."



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### Rival frameworks to be launched

to the make of Hamfett Backard Co.'s in the waxe of newper-lackand co. andication framework ICW Jan 101 Unix developers with mixed-vendor shops will have a choice HP's Telimonanops will have a choice riff a failgenting for Univ machines of a

competing object framecompeting object in 11---well in advance of the prod ucts' release later this year and before the Object Management Group shins its Common Obsect Reounced Renders Apphilications (CORRA) 20 which will allow the two object frame-

works to interoperate. Both the SunSoft and HP frameworks bave similar components including an object fewer that site on ton of the Unix operating son tom - distribution mechanism for objects and an application de-

velopment environment (see chart) But developers will likely have to choose between the naths because the frameworks use different object class Uhranies as building blocks. The only

practical auxiliarity to use trans-MONTH IN TO M.

CORRA DO mbish has desum our port from Digital Equipment Corp., ATAT Clobal information Solutions and IRM among offices will be the office that holds to mithen distributed object.

	SunSelt's DOE			
lemstracks	OpenStep AFI			Common Desktop Environment
Amucinos Emecenen	DOE/NextStep applica tion environment DOE Object System OHC/NFS			Taligent application environment Taligent development system
DEVELOPMENT SYSTEM				
ALTHORNIAG				DOM/DOX
OPERATION System				неци.
TARDWARE	treet	SPARC	Power	PA-RISC

oriented applications written in different frameworks. But the specification is not due to be polegged before the fell "CORRA 2.0 is a bridge," said Paul McGuckin a Univ analyst at Gartner Group, Inc. in Santa Clara, Calif "Pabeen a choice of either an application

development agricument of a set of development et United States of States and States and States and encorne they feen a difficult sholes Large sites with a variety of liniv and

tems are already planning how to cope with an ausortment of object frameworks - and with retential immenatibility

Tonnelpubly it moved be a very big problem," said David Presak principal consultant for advanced consunant for advanced computing technology at Du Part Co in Wilmington Dol Sight new those's not need is fall most agreement about how things are ming to be done " Cornorate developore can hadde their bets by

choosing a subset of object framework functionality that can be tested in both frameworks Shows board Conflict major Next Computer, Inc.'s NextStep to add ob-

ject class libraries and methods to its Project Cities appraises and specifical to to where (DOS) application development environment ICW New 98 19901 Sun-Francoucke constit

### Skentical users

sage Unix shops said they face the question or control ontrol man-

They understand vendors' need to diff da their products with proprietary during their produces with proprietary to provide in his customs that stay on line for ma ars is foreing their march to stands We work CORRA and we need it to be Dick Navarro, director of integrated

a real slandard, not a paper tiger," said winet definition processes and tools at McDonnell Douglas has about 1 000

McDonnell Douglas has about 1,000 1 laiv www.kstations.that handle-design and engineering work, most of them HP 00 Model 700s. The site also has IBM mainframes that bandle administrative nos Navarro said ha wante to ensure that Unix hardware can be re-

ced without disrupting software an iontion con lone term projects Most serospace projects last for many ears, while the underlying technolog changes rapidly he said. "The vendors! are in business, and they have a right to make profits, but we need to have an enname profits, our we need to a needs," Neverte said. — Jean S. Bo

## Market for re-engineering tools burgeons

### Ry Melinda Carol Rullou

With demand birth for moving leaves anntientions to client/server environments the market for re-engineering tools has burgeoned over the past six months with announcements from Knowledge Ware. ine., IBM. Texas Instruments, inc. and. most recently from Siemens AC Austria For developers, one of the keys to spe-

cossful re-engineering is being able to find and extract the code needed to perforth particular business functions and then to migrate it to the new environment, such as a client/server setup.

The market is growing for such transition tools, according to Jim Sinur, an analvst at Gartner Group, Inc., a Stamford. Conh. constilling firm and developers require a range of options.

Some customers, for example, may need took to bring lemey applications over to KnowledgeWare's Application Development Workbench (ADW) or TI's Information Engineering Facility (IEF). Other sites may opt instead for a more open migration tool, such as those from market leaders Micro Focus, Inc. or Viasoft. Inc., analysts said.

United Airlines for instance a mai IVV esta is mistarilast "bandends of millions" of lines of leasey ende to elient/ server platforms, according to Wayne Anderson, director of San Francisco MIS at the artine When the project is complete, some 82 systems that support sircraft maintenance will have moved. Anderson's stream is interested in checking and The so-continuouslant tools for making

But even though increasing numbers and types of products meet this need. some vendors' strategies are narrowly focused. For example, Sinur said that both Tl and Kniggleder-Ware have a neoprintery interest in furthering their own computer-aided software engineering (CASE) strategies. "That's their main roal, though they can belo some ormalzations deal with refurbishing their les-

acy base," he said. Siemons' new family of relatively lowcost CASE tools, just now becoming available in the U.S., does just that by offering a range of design, analysis and reengineering capabilities, according to company officials. Dubbed XperCASE, the product is already in use in Europe. Thele Windows-based tools from Sie mens after the following less upon

\* Re-corineering of C. Cobol and Yhour · Graphical representation of source

· Point-and-click functions to m-engl · Automatic software reconstruction, bierarchical structuring and documenta-

To re-engineer legacy programs using the Siemens tools, developers run source code through an analyzer that creates a schematic disserum of the program. A prinder of structured lists allows devel opers to see code (aprilions and variables and view the appreinted hypiness functions they perform according to Oliver Karrall, a product manager at Siemens AG Austria Developers can then noin and click on a function and zoom into the related pieces of code, he said.

The Siemens tools are shipping nor and are priced at \$1,365 for a single licome and \$3.990 for a network clarice

Thompson Brandt GmBH, a German onsumer electropies company in Vill-Increa, used the Siemens tooks to custom ize and restructure existing software Hans Vollmer, a project leader al (be com near said they were "year helpful" in re-

nd code functions and variables The Sigmons tools our not as back and complements to upper-CASE sappli ers" such as Tl and KnowledgeWare by focusing on maintenance and deploy ment according to Wayne Kernochan an analyst at the Aberdeen Group, a Boston

### based consulting firm Mostratonde

For example, KnowledgeWare's North star and Lemen Workboneh radiovslop ment tools allow developers to extract chunks of legacy Cobol code and place them in an interim repository for graphi cal analysis. The rode out then be conved into KnowledgeWare's ADW for pule pletment ICW New 15, 19971 For its part. TI uses its Carrent Sys

tems Modification and Current Systems Analyzer to find and extract pieces of relcount node from lanear systems and bring II over to JEF JCW, Oct. 18, 19631 As for other psoful re-princeting tools, Sippr said IRM's Visual AGE which ours Vincolt technology "under the covers" - is less proprietary than some of the other available tools and may

he better able to help developers under signd the impact of changes made to soft ware across platforms

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### CA object tool for Clipper enters beta

Computer Associates International ten annears close to delivering on a promise to emale a visual programming antique. ment that experales code as fast as that emerated with a third-experation langeneration was a t

After almost two years of development CA Viewal Objects for Windows to mathematical bata testing it is intended to bridge the man between higher-level languages that typically generate comparathyly slow applications and thirdmagnification incomes such as C that generation tanguages, such as C, that give developers faster application per-

Important to expansion Visual Objects generates low-level code

that is as fast as C or assembler and a N's the only innerser I know that combines a higher-level language with the low level speed of a C or C++ " said Carl Notice a programmer analyst at Memneuson, a programmer/analyst at Mem-

Initially, Visual Objects will support Connectivity drivers from Microsoft, for CA's Clipper database but the company said that it intends to extend Visual Obsects support to other languages. In the mountime Visual Objects will be a critical part of CA's efforts to expand its base in the Vilence morehad

Climer is currently a distant third in the Yillow market behind forland later. netional les and Missourit Com Pu providing a visual programming covironment that experates significantly faster aredications. CA is beginned to shift

the current allegiances of Yilana denti-Meanwhile Rorland and Microsoft are morking on extending their Yileso lanmanus to include support for abject extensions. CA is racing to deliver Visual

Objects before Bortand delivers dBase for Windows this Jane (CW Jan 23) CA officials declined to comment or their delivery timetable for Visual Obineto but Memphio Light Gas is nalno Visual Objects to develop Clipper anotil rations deployed on the AST Research

Inc GridPad PCs that its support person not non in the field This Clipper application will be a Win lows version of an existing DOS applicatinn that tracks time sheets and truck inventory Nelson and For the lang term Nelson said be remed to use Visual Ob-

inche which comports the Open Database fulure elient/server annications Currently, the utility relies begylly on CA's IDMS database running an a mainframe, but the company expects ultimetals to many to a client/comes cashi tecture according to Nelson

### Frameworks

CONTINUED FROM PACE OF

Soft plans to publish the appl gramming interfaces to its OpenStep software layer — a version of NextSi that is being adapted to run on top of its Solaris operating system. HP recently joined IBM and Apple

Computer, Inc. in backing the Taligent environment [CW, Jan. 10]. Taligent's class libraries and development system will be integrated with HP's HP/UX Unix operating system but they will also be ported to IBM's OS/2 and AIX operating systems and to Apple's System 7. HP will also support proprietary

NextStep code running in

native mode on HP/UX. But neither framework is ready for use although early versions of both systems are set to ship later this year. "Right now, it's a vaporware battle," said Chet Geschickter, director of research al Hurwitz Consulting Group, Inc. in Watertown, Mass. "H's a mess because the convergence point is yet-to-be-released

software. No matter what

hannens with CORRA distributed abject technology is going to be incredibly comniex to design and implement, and even more complex to manage and change

There is ening to be a hig hattle ound for one framework environmen vs. another," said Natasha Krol, director at Meta Group Inc 's Advanced Information Strategies service in Westport. Copp. She said each framework has its strengths: HP is shood with the "whenh

ins" that allows objects to be distributed over a Unix petwork, while Sun's NextStep framework is shead with Bundreds of business objects ready for

assembly into applications. Huere at some SunSuff. only sites are pleased that Next's object technology will be part of the Solaris en vironment Brewers Retail Inc., a Mississauga, Ontario beer distributor, runs its business on 15 SunSoft servers and develops applica-

tions with C and database tool cote Pompi Malik, MIS manors or at Brewers Retail, said NextStep was passed over during a 1983 evaluation of object-oriented products due to concerns about Next's future and the proprietary nature of NextStep's

object oriented male

by midwar, SunSoft place to put its from work on the m bin, vice nee

Taligent, Inc.'s obi

mework will not ship

Micro Room Inc has enhanced the Mion Pour CICS Ontion Version 7.0 s product that provides users with a malitiproduct that provides users with a many vironment for creating modifying and

testing CICS applications According to the Pulo Alto, Calif. comnany the product provides a flexible inteimsled tool set that includes a series tegrated tool set that includes a screen anhanced command proposes and full CICS ampletion. The CVS/SSA 2.2 code. sand-level application programming in-

nefaco is also provided Micro Forus CICS Option Version 3.0

MAKETO FOR Man Br CETTINGS AND

Teltus Inc has announced libration 1 2 6 of Tritus SPF a 32-bit AIX version of IPM's mainframe based ISPE/PDF 3.3

According to the Austin, Treas, comnear Tritus SPF allows mainframe area pany, 17ttus Sev agows maintraine pro-

ing the same commands and keystrokes ng the same commands and Postures include unlimited lindo

Redo nomeno codo comment highlight ing, modifiable panels included n Dislor Test Mode compiler error file intomotion into course data multiple local cal terminals that allow up to 16 ses-

sions, eustom fonts and a large file A Tritus SPF have license plus seven

additional coocurrent user licenses manufacture and the state of th Tellus

45 191 204 4000 Virtual Software Pactory Ltd. has an nomend Records-SP a suite of tools designed for reverse-engineering of Cobol/

CKS/DB2 legacy applications. According to the Herndon, Va. comps. ny the product comprises three modules: Recover which extracts design information from source code, data definitions and job-control language and provides text and graphical documentation; Repair, which allows maintenance and enhonorment of the Recover design and provides impact analysis on proposed opers to the source code; and Redeploy which provides tailoring entriess to enable application conversion to new languages and/or hardware architec-

Module prices for Recycle-SF range from \$18,000 to \$22,500

► Virtual Software Factory (703) 318-1180 Lucid Inc has introduced Version 2.5 of the Energizing Programming System,

Unix programming tools According to the Menlo Park, Calif., ompany. Version 2.5 offers improved ease of use and reduces the development

cycle Support of precompiled header files has been added, and files are 50%

The Energizing Programming System

ar --- - refirm and extend the links of

for users within a project. The newbort also newides improved The product also provides improved

for nested types and multiple rene tories The industry standard Tone forhis" type is supported for more precision the type is supported for in

Vincina 2.5 souts \$4.250 for a single noit and \$2 900 necunit for 10 I would

► Lucia Innered at the has introduced (thing)

Continued of Continued Continued rumod for extentific and nectagorist doaffined to a world According to the Part Washington N Y

soy, the product includes founds tion classes, nameric components and modeling methodologies Object Confession 2.0 movides from

methods for handling runtime errors naming macrame expendence and retwented code The needest comes interested with a

craphics package and is portable under DOS Windows and Heiv The DVM/Windows supplies of the needand in completely for \$160. The Universe

........ b Imagelet

(518) 767,9993

### reduct shorts

Integrated Systems, Inc. has introduced Proxim, a host-based simulation tool for the Psosystem embedded renitime systems software environment. The tool consists of a Unix library simulating all programming features and the Pagan programming reneares and the racsystem, providing host-based development of Psosystem applications in the absence of connected target hardware. Cost starts at \$1,000 literated Sen

tems, Santa Clara, Calif. (408) 980-1500. Excel Software has added cohanced object-oriented design, code browsing and re-engineering capabilities to its Mac-Analyst and MacDesigner spite of computer-aided software engineering (CASE) tools. Pratures include a Browne window and a Translator stillity that provides re-engineering of C++ and Object Pascal code into the CASE repository creating a data dictionary from which class diagrams can be automatically generated, Cost: starts at \$996. Excel oftware, Marshalltown, lows (515) 752-5359 FMS Professional Sharmann has introduced the C/C++ UtBity Shrare. which houses 1,090 nublic domain and charewers products for programmers who use C++. Turbo C and Microsoft C. Files include benchmark, binary tree, linked list, paradox engles, program everytor and string and text processing. Cost: \$59.50 on CD-ROM or \$149 for the disk service PMP Budges Shareware, Oloey Md. (301) 924-3584.

Kolax Image Products has introduced Version 1.5 of the Kipp Advanced Developers Toolkit. The document imarine tool kit includes storage litters for saying scanned images in popular file formats. Coet: \$4,985. Kofax Image Products, Irvine Calif (714) 727,1733

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# The brains behind Windows N

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these machines can be right on your desk Manipulation spreadsheats Processing data. And, perhaps, even changing the course of history

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run Windows NT, think about what's inside After all it only makes sense to choose the ouickast processor that processed the program.

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# **Management**



Pitney Bowes' Frank Pensiero: Payback on a new

arry St. Onge might be tempted to call his company's first attempt at using a wireless

data communication

It wasn't that the equipment the company invested in didn't perform. The problem was a difference of opinion on whether it was ever needed.

St. Onge, then sales director of the Field Recorder Group at Agfa Miles in Wilming. Ino, Mass., which manufactures and sells graphic film recorders, wanted to replace his department's inefficient paging system with a wireless system that would provide his staff with two-way data

He tied together his 12 field salespeople and application support specialists using a wireless packet mobile data communication system from RAM Mobile Data

By Joe Panepinto

# **WIRELESS**

St. Onge loved the idea of being able to communicate directly and immediately with all of his staff via electronic mail and believed the system was worth the expense. But when he hecame director of international marketing last spring, his successor didn't share his enthusiasm.

"It was silly," says new sales director Peter Oprysko. "As far ás instant access goes, none of my people would have interrupted a sales meeting to answer a message. Anyway, they were all avafiable on pager, so I saw the messaging system as a use-

less redundancy."

So he pulled the plug.

COMPUTERWORLD FEBRUARY 7, 1996

# **GOING OUT**

Applications using wireless data communications can be a big boost to customer service. But it's a big pain trying to cost-justify them.

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### Wireless

COMPANIED PROMERCE OF

White same illustrators the diluse ma facing nitrology adversages who company to make the investment. find the mechanish as find to a hour the navoff of a wireless data commuplayers of a wireless data continumemorals system: Proving the rewiseless anolostions is a tough

Commence observe that he proving customer continu stomer service bround. technology is one of the hot issues for information systems excontinue Window data would seem a sure-fire way to provide sustamer scheduling in-

ventory status and other binds of ventory sentus and other senter of vice personnel. This can enable companies to respond morr quickby to compare only and better most customer needs

Dut when window advocates and an extended to make a constitution dellars and conta case for these benefits, they often are forced to monton a wire

to trivial as it may count aliminating the time field service and access spend searching for a telephone may be the only hard-follar priorie mity de tue only mai d'accina savings a manager can denou-

Management knows instant access to information will give the ormanipation some kind of advanturn. They're just not some what it o, They re just not sure what it says Iro Brodsky, president of Datacomm Research a No.

council and committee firm in Wilmette Hi THE IN WHITEVER, IN. datal just looks tike fit has a for of notontial but It's diffi-

cult to cost instify "Brodcloudatto

Dishard Olive seven diseases of mobile computing and wireless monte computing and wireless

Decisions in Norwell Mass. susouts the difficulties in estimating ROI for wireless communication evetoms is hindering the market's

the she and of some shore many former than 725 000 mobile data

### Metering ROI at Pitney Bowes



sination subscribers in the IIS a number that is stronger by only about 10,000 to 20,000 hugh ness subscribers per war. In contrast religiartelephone use grows br 11,000 husiness and pophusiness subscribers combined per month

Two of the higgest names in mo bile data communications - RAM Mobile Data and Ardis - have fewer than 50,000 subscribers comblend Shorenn

sed bottom line

Many people are having trouble justifying the additional cost of mobile data communication systems. Silver save because these systems don't so much replace passers and collular phones as add new expenses to exist income "Right now, when cost-justifying

one of these systems you need to look at all of the mobile devices. your field personnel need to stay in touch "Siber cave The average monthly bill

for ceilplar phone usage is \$50; for the SkyTel paging service. It's \$74 per month Add the \$100 per month av erner cost of a mobile data unication corridelike Ar

die or RAM Mobile Data and you have a significant increase in monthly cuttery not to mention the cost of equipping field personnel with hundheld devices. Outside of the package delivery

Industry, where the technology is really a cost of doing husiness for companies such as United Parcel Service Inc and Rideral Express

Corn. If Is near to one host out Corp., it is easy to see now some, Ages a Opryson among cares, retens as an expensive redundance One organization that had a hard time demonstrating the ROL of windows data communications or waveless base communications National Computer Systems Inc.

in France Minn The company exclusions the notential financial bonefits of wireloss data communications avetome for etmombining the man sement of field service engineers and disputch continue by comforts ing a for-month preimplements tion analysis of the technology At the and of the flux months. Nation a) Computer was consinced there as Computer was convinced there the system.

National Computer began its costjustification by comparing the say ings that could be enined from discontinuing its paging service (provided by RadioPass America) and replacing it with a more rohust system, explains Rich Hanson controller of customer sunnost comince development in the Di descritores

Since field service engineers would be in constant touch with the home office via rustedized handhold terminals communicat ing over RAM Mobile Date's radio packet network National Computer saw no need to retain a paging

The new wireless system would allow the firm to get more information from its equipmers into the Sold Since the colleges delpting the wireless system would automatically route calls to the primary or secondary on fineer on an account, fewer dispatchers would be needed to answer inquiries from customers or field service enti-

neers responding to pages. Also, ares managers would no longer need to supervise the assignment of incoming customer culls among field service engipeers in their charge, instead, the managers would be able to concontrate on selling additional ser-

rices to customers

On the debit side of the ledger, National Computer's total initial in vestment was \$16 million to equip 200 field service engineers with the ruggedized Itronies Corp. T5000s and customine

application software, Hanson The hottom line? "We figured our cost for communication services - pager ys. wireless data was contratent." Hanson cave. .. In addition, the firm performed

time-use studies of field service engineers and asked Ardis and Wireless, page 104

my metal

Wireless LANs are proving popular with the sales force

HAVING THE EQUIPMENT IS ONE THING.



The series of th

### KNOWING HOW TO USE IT IS ANOTHER.

Mikter, Voloal, knows in trooling like wedo Ristars hi nobing with the healing minimfactures to design on twork fee feelly tallowed par von Vaking sine it stars that new And supporting it with technical expertise from people who recolling indice stand van network for colding systems networking products and the know hou forget van exactly what von need exactly when yan need it there's only one place to exist a second of the color of the contraction of the color of the place.

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### Wirologe

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The company burked at a new her of metries, including the issuenot metrics, including the average response time for a service can, me total number of cause serviewd in a day and the smouth of contribute for a scarcing iot a then

As it turned

tour. the stape in the amount of time spent severhear for a telephone" after they warm normal

Conductor entermotor that field service nervolved typically spent title 15 minutes on rehimer function to to to mentale searching for the 'In most appropriate or February

and the second second second than an hour looking for tele phones. That's more than 100s of their workday." Brodsky says All in all Hanson have "We found there mould be a substantial to use the first would be a sumstantial

That is if one considers a 70-improvement in field force utilization or productivity to be a substantial enough peturn to metify the initial investment (To be fair it should be nated that the field force accounts for a lower past 25th of National

### Computer's costs )

Postage-meter maker Pieney Bowes, Inc. had better luck in its BOL search

A defeated BOI amplicate conducted by Pitney Boxes estimated the company would realize a 24% return on its \$12 million mobile data communication investment over a seveo-year period, according to Frank Doneless manages of our tems development for contoner service at Pitney Bowes in Stam-

The wireless system supports more than 150 field service reas across Pitney Rowes' extensive product line of production mail equipment and office products Payback on the system came in 2.4 years, which Prosiero says be was

very pleased with We justified the system in terms of people sayings." Prossero

Before the wireless system. Pitney Bowes had 18 service support centers staffed by dispatchers who would field calls from customers, retrieve customer informa tion from the company's database and then page field service reps or

workdon with a wiredoor date over-

most for them to sell in Once the dispatcher got in touch

noth the new the dispetable awards recan the call with the envioner once the remand formshed noth the contemporaril homorald accommod the dispatchers would then be store to the system

The new system - Motorola, Inc. KDT HATChendholds communic on fing through the Arriva radio notwork - water enviormer calls do mostly to the field comics care to has allowed Pitney Bowes to reduce the dispatching office space and work force by 60% and consolsdate IS call content to viv

Two-thirds of our cost-justificalling for the system came from the consolidation of the sell sen ters." Pensiero sessi "Resides olimmation the fembles are sound on the cost of lensed lines and computer equipment and terminal mainlenance.

### Efficiencies were also realized in

how field service rens used their

time. Prossero figures the compaoy realized an 8% productivity increase doe to the new wireless system, including time saved searching for telephones and im-

The new wireless system Pitney Bowes installed enshied it to reduce dispatching office space and staff by 60%. Its 18 call centers were reduced to six.

# TIME IS ON THEIR SI

The biggest,

cost savings **National Computer** Systems' field service engineers found was the ( time gained not searching for a telephone

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At fact there was come concern among management that hold you among management that need serthe personner would about the ewetrome-messaging system and

In the bearmoust we track to on the beginning we trave to cooper me may or me each rep to see "But the messaging areto says. Dur the messaging sys tem prosed to be such a productiv

Instead of putting formal street meseau or purms contain and note ones to each field correspond nets open to each field service rep. common this wat had a navane on the custom could one more or - 1-1posted by any other ren. The result is that a form of colloplicing or self-remarks has impled the amount of nonhumous-related reffic At the same lime, the nublic nonting of all processes has emerged on insertors in sconers tion among field service person-

"We haven't measured the say ings but having the message nage, our miring the and limite the tenth of the boundary manner only," Pensiero says, "With pagers and cellular phones, you can't do and centain phones, you can't do related expense.

Wireless skeptics

Corporative forces there half of Dat ner Bowes' field service rone conlinue to carry pagers, and most of those who do are contractual or on-site reps who are rejuctant to give un their names until the wire lose existen propue itself. For the rest of the company includior cost-coescious upper management, the wireless system has al-

ready proved its worth "Most everyone in the company (including management) has no cepted the wireless system as important to our business - maybe too much," Peosiero says. "Whenever the system goes down, even for a little while, everybody really

Wireless data communications has shown a payoff at Pitney Bowes, thanks to the consolidation and job elimination it has enabled. But at many companies, an ROI analysis - or enthusiasm for increased communication among workers - iso't the way to prove the worth of this technology to skeptics looking for high and quick

Wireless advocates may do better to focus on the customers stained and retained by wireless applications and write off the expense as a cost of doing husiness.

Prancpinto in a free-lance writer in Ambout Mace

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## Maximizing IS' value to the organization

### Thomas I Ruckholtz



December to the second to exotome and so sieme anutehome a future or a strategy maker? Bafaro van rofley. inches and you concid

ity can be and is increasingly being done by contractors and clients Outcoursing examples abound and on compass selecting and operating tech-

compass sesecting and operating techas a sectom a description among a sector regining and providing information Done business or conference falls in

line - consultants and empowered em ployees suggest and implement change To the St. own company? And information technolog elista destined to be people without whom a business can't compete but who are

serenived as a second-class staff function providing commodity services? Yes, unless something is done Contrast IS' situation with that of other statt tonetotus suco as talance an naw. For the enter executive nameer, is such as profitability and the financial asneets of notential busi-

pects of potential busi-And with learn income cuch or meinteinings favorable regulatory mate.

nologists fail to contries concept writing to enhance propie's perceptions The products of all orations depend ov

phrithy or greatly on depucitty or great ensous and their half framulation why me the who, what, when, why and how of siretests decisions? Why not cut a lyze improvements is communicating and im-

plementing those docipiene? Can information teeb nologists achieve line

status? Can they achieve first class steff Fortunately the answers are yes.

Ry focusing on hueinoce doole and SVDerev hotwoon

neonle and organizations. information technologists can become coaches for and partners

in the most important decisions.

nwicets facilitating Shemore' next inimation in the denartment's pro IS can play a key role In decisions about forming business alli ances; much of the value of a partnership No. 1 a the art Minute shows information

southers systems internation services

As formachiering faut

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The IS community must recomize that the is community must recognize in formation and fairness at the effective such as the mission of an presnization objections of a project or parmoses of - 64

By focusing on business made and synenty between people and organizations information technologists can become conches for and partners in the most im portant decision If they rement had sworth in subancing

the making and implementing of at make ric decisions, then as information profinione catalysts information of the old and old mineral manufacture the statue of a first-class support funttion - indeed, of being an integral part

of owners management The time has come for the information resources community to show its true potentiel

Problems and committee and debuttor need Services Administration's Information Basources Managembat Service, where he led the deblerment of commetter and telepropropries. tions throughout the U.S. movemment. He lives

### Executive

### Track



Edward Palmer has jouned Scriptel in Columbus, Obio, as vice president and chief information officer worked at NCR Corn for 29 years, retiring

on the company as director of market. ing planning and programs for all chap-

-4000 George C. Kenney has been not and managing director at Kidder, Peabody & Co. in New York, reporting to Se nior Vice President and Chief Pinancial Officer Richard O'Donnell, Kenney was most recently executive director of information technology at Spring Bank Corn Delon to that however conformion resoil dent and CIO at the American Stock Ex-



Brandon Systems Corp. in Secaucus. N.J. has announced that Stephen B. Lacas, 55-has been annointed CIO Lucae igined Brandon in 1991 as manager of

information systems. He was previously manager of financial information conters at IRM

Financel Resolution by head named assistant regional commissioner for dato processing at the Internal Revenue Service's Midwest Region based in Chiover Prophoinski assists the regional commissioner in planning coordinating and evaluating returns processing con restor services, revolute accounting sublie affairs and taxon ver service activities Prior to his appointment Structure is according dispotential to 15

development liaison programs for the IRS in Washington. He is a native of Consonal Austria



Michael Liebhold has been named vice newident of technolnevat Times Mirror Co. in Los Angeles. Liebbold, 48 will be responsible for guiding the company's eries. He will remort

to Efram Zimbalist III, vice president of strategic development. Prior to joining Times Mirror, Liebbold was senior scien list of media architectures research in the advanced technology group at Apple Computer, Inc.



restions, Inc. is port to J. Peter Johncon vice president of tary and controller Her responsibilities for all stobal operations will include an plication development for all platforms ranging from the IBM AS/400 to PCawide area network management clies server computer operations; and telecommunications. Prior to joining Tellabe Vacantums director of decision and port systems at Helene Curtis Industries. Inc. in Chicam



tive vice president at Enterprises Systerms line has been pamed chairman of the organization's III 7 executive com

HL7 has also welcomed new members to its two advisory boards, including Landen Bain, ClO at Duke University Medical Center Bain has been appointed courteirman of the Health Providers Adviscory Board

Phyllis Gardner has been promoted to di rectors I divisional MIS at the McCormick/Schilling Division of McCormick & Co. in Sparks, Md. Gardner will be responsible for collaborating with the divi sion's functional areas in developing and plementing both a strategic and a tactical MIS plan. She was previously directorof sales and marketing administration at McCormick.

e Coursever has been appointed director, planning, technology and devel apment at the North Atlantic Group of

Cillette Co in Boston Showill report to CfO Larry Cunther Her reupotuibilities include technology planning information prohitecture and systems development Courneyer was previously directorof 18 at Bolt, Berapek & Newman in Combaider Mass

Gary Naimen has been appointed vicepresident, MIS, et CMS Enhanceme ine in brone, Calif. Naiman, 56, has more than 20 years of experience in systems management at Portuge 500 companies. He will be responsible for developing

company information systems and tech Prior to joining (MS Enhance) Naiman was vice president of West Const ISat Los Angeles-based Paramount Com-

munications The National Association of Stat ation Resource Executives (NASIRE) in Lexington Ky, has announced that three of its members have taken new po-

Ann Puelberg of Trons, formerly co centive director of NASIRE's Depart ment of information Resources, has tak en a position in the private sector John Ruffin, of Mississippi, formerly director of NASIRE's Ruman of Systems Policy and Planning, has been named executive

director of the Central Data Processing Authority. He replaces Frank Stebbigs who retired in December Lastly, Terrence Maxwell of New York has been named executive director of the New York State Forum for Informs.

tion Resource Management



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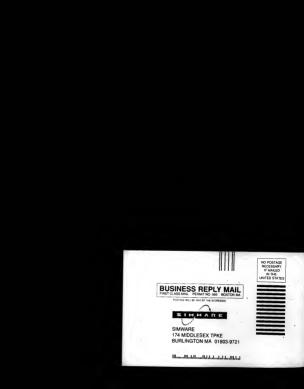
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ach year, for the last 100
years, millions of British
shoppers have walked
through the doors of
Marks & Spencer to huy
the latest fashions and
household goods. Last
year alone, 14 million
people spent the equivalent of 13
hillion at more than 600 stores in the
UK and overseas.

The company netted an impressive \$1.2 hillion and, along with the profits, captured another asset that would turn out to be worth millions: point-of-sale (POS) data on the 3.5 million customers who had charged their purchases to the Marks & Spencer credit card.

With his who-hought-what-when-

and-where data, "technomarketers" at the firm can predict down as specific individual who, for example, would be most likely to purchase women's cosmetics in March. That's why, in March 1982, a halfmillion people who recently boughtout flowers at the department store

That's why, in March 1962, a half-million people who recently bought out flowers at the department store received a direct -anil piece offering them a home-delivery flower sersons marketing, popt 17



MARISCO'S DAVID RLEN: With direct consumer input, we have the ability to respond first



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### THE 1994 COMPUTER BONL PRESENTED BY THE ASSOCIATION FOR COMPUTING MACHINERY

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### Smart marketing

CONTINUED FROM PAGE 115

vice. The response was so fremendous that Marks A Sponson has a 10th charair that Marks & Spencer has a 10% of the home-delivery flower market

Tollowing this same procedure to cell wine food oil baskets and oil certifientes Marks & Spanner's mail-order hardness has mean from \$15 million in 1990 (when it only sold home furnishings through the mail) to \$75 million today

Analysis, not narelysis This is not your ordinary POS system that de our your ordinary root system nattern data A MG-boto database called MarketPulse, from Computer Cornoration of America in Cambridge



Mass, categorizes customers according to how recently and frequently they made a purchase, how much they spent, where they shooped and what they

Fach weak that date is unloaded from

the DOS contemp amortings "living date have "as it's known in marketing eigeles The beauty of a living database is that

the neway of a sving database is profile So rather than develop profiles of the "amount must develop progress to the average customer and meauge but one develop a stood sense of the individuals who shop at their stores. "It's shout reaching those who are warm to the tench " case Bill Savade manager of continues information comings, untanget of

Noticer. in the compensate on, not anough: marketing analysis today need to elose the loop. They need to react quickly \_ by shanding their nitch prodnot dollows or comice ... to what they learn about their customers

"H's analysis" not narelysis" save In alloyers, not paragrap, may Jane Mermesseun, menaging monounce of CSC Research and Advisory Services in Cambridge Mass "Classic marketing describe the state of the sections wants "Marmaletein operingen eiting a bank that mans-mailed a letter promotinf a home-county loan-unfortunately come of the majoients didn't even own homes. Worse if followed up the initial mailingwith an identical one whetheres and the recipients but many dad

Smart marketing on the other hand usually results in whole new ways of doing hosiness or producing the product - whether in purroit of customer information or after having outbered it. "No one would have felt confident enough to invest (in new havinesses) without this kind of control." Savage save. The case of the cookie shortage

"Be patient — more SnackWell's enokies are on the way!" You might be families with this Nabisco Boods. Inc. advertising anaism but what you may not know is that it was just one part of the East Hanover N.J., company's plan to respond to stomer complaints about a national customer comb



Last year, the company best known for its Oreo cookies launehed a new lowfer and fet free line called Spark Well's The okies and crackers were so popular they kent the firm's 800 consumer rospecies line ringing around the clock Thirty thousand callers said they loved the mokins but their storm had run out Where could they buy more?

Although Nahisro hade's entiring arb domingd, it was prepared for the crisis. Operators who handled the calls noted the mounts in a consumer reenough database Vice natural the data trimmend the bakeries in Winston-Se. iem, N.C., to increase production and alerted brand managers at brademar ters in East Hanever to revise their sales forecasts. Meanwhile, customers were notified on national selection that they wouldn't have to wait long for their be-

By 1995 POS data will also be included in the chain so that from one interfere the firm's marketers will be able to view

loand anobias

consumer response sales forments POS and shipment databases, no matter

The most important link in this partie. ular chain is the consumer input. Like many consumer mysts manufacturers Nabiron ness the mealest receased convices of Information Resources Inc. in Chicago in analyze the information math-

amed he its BOR assistant But although the Information Ro per succeeds out implication tosales to be very strong it couldn't alort the company to the magnitude of the demand. "With direct consumer input we have the ability to respond first hand " any David Claim disactor of man keting systems at Nabisco.

And being within responding dieta of the customer is a key piece of the new re-engineered marketing "You want to marry thorons competencies of the firm with the customers." Mermelstrin save

Such a marriage is likely to moult in nome radical emmanational shapers Sometimes that means mexical the smarter parts - and with them the comparison popular - along the tipe to the source er" says Brian Reynolds senior manag er at Boston-based Nolan, Norton & Co. That's why you see instances such as a on-desired forms company putting its too designers on the phone and taking customer orders. The designers can advise customers in a way that eleri-----

### Is it plugged in? The premization is not the only thing

that can change. At NEC Corp. in Boxb ro, Mass., the company is listening to its the computers and peripherals it sells in direct response to their comments All day long the 60 technicians and on-

neers at the firm's Technical Supp Smart marketing, page 118

### Trends in marketing automation



### Three types of marketing



### Smart marketing

CONTINUED FROM PAGE 117

Center answer questions ranging from "What video cord should I use with my NEC monitor?" to "Why isn't there any nicture on my screen?" Haing a database called Vantive Support from Vantive Corn in Mountain View Calif, they answer the caller's questions and record what transpired.

At many firms, customer support stops there. But NEC is using this database as the ultimate marketing tool. It's feeding the information gathered at the support desk back to the product development and engineering groups. One month about 3% of the 50,000 callers were calling to complain that they couldn't get a directory on their NEC Multispin 3X CD-ROM readers. The problem? No disk in the drive

That led the company to add an LCD panel to the next version of the product. Now, when you try to call up a directory on an empty drive, the panel will politely prompt you: "Disk?"

"We don't want [customers] to have to call na anymore." says Tom James, manserved technical support

James echoes the technical support philosophy at Reuters of America, a provider of worldwide real-time financial information. Its eustomers, who receive financial data from Reuters directly on their Windows-based PCs, might call to verify a London stock price that doesn't look right. Or they might ask how to download the international bond prices from Continental Europe into their Excei dsheets. In total, the Chicagobased technical support center receives nearly 1,100 calls each day Restore has installed an automated

customer support system, called CRR Express, from inference Corp. in El Segundo, Calif. But it will ultimately be able to channel common complaints and constions back into other parts of the organization. When that happens, save Robert Friedenberg, a vice president of Inference's Consulting Group, Reuters will be able to launch new products say, a macro program for loading Revters data into an Excel spreadsheet based on the information out he red on the phonos

"Product support is a window to the customers. They tell you what they like and what they don't." Friedenberg says. Companies that can quickly respond to customer input have moved far beyond those that target "average" prospects But, says Stan Rapp, chairman of Cross Pane Associates in New York and author of Bewond Maximarketing (McGraw-Hill, 1994), even these marketers are barely seratching the surface of the

available technology in the next five years, Rapp predicts that marketing will become even more highly individualized. Here's the scenarin be envisions: He accepts an offer from Air Prenon to 5v round-trin to Paris on the Concorde for a business-class fare. When he returns home, he gets a letter saving. "Dear Mr. Rapp: We are so

niessed you accented our offer When do you plan to fly again? "They should be thinking of me as a prospect to pay full fare on the Concorde," be says, "But at boart, fcompanies today] are still mass marketers." .

Disjour is a Senten writer who frequently writes



### Rarton Goldenherg

# unexpected iourney

When Dow Furning decided to re-andnormite marketing process the company had tittle idea it would lead to jointly do. voloning resugable food-pack agency mateminte

What the company did know, accord-Ingratus Atkinson disserts of business technology and information at Door was that it had to brook from the old business model that the showing in decision for decades. Gone were the days when rufacturing plants could produce kile after kilo of powders, netlets and liquids and be confident that these products would spearhead new business concerns

### Two steps ahead

Like many industrial compenies testas: Door had to and in the mathes in the manner

To meet the new business climate, the company decided it would have to begin exercise new opportunities about of the marketplace evaluate the business value of those opportunities and calculate likely outcomes — all before bringing a new product to market Downard two techniques to meet its mai: the use of product development tonne and comething called Tredston

ship marketing." With product development teams, per sonnel from marketing, sales, technical and manufacturing work together to interrate customer needs with core competencies and technological canabilities of the supply channel. The team deter-

mines which products are the most anpropriate to market and when Global electronic mail, LANs and group software all beinto ensure that team members have a common view of the marketing process being used and the resulting documentation of findings and agreed upon actions. ..

Dow also found it could benefit from closer working relationships with members of its supply chain and distribution channel. All three now sharmvital information in order to achieve a common market view better segmentation of end users and improved understanding of eustomer-specific requirements and other market-related issues.

### Key to a good relationship Electronic data interchange, E-mail. business simulation software and im-

proved account management communiention systems are all used to establish this type of relationship.

Account management communication systems were particularly important for

halaing materials and section factors beiping customers inderstand what is tion -h--- Id be charried between Dow and distribution channel members, how to hetter follow up and track now presents and how to communicate important in

formation among databases Printed among gazzoness. Consider to come in a consistent of any other instances Eurovamele Downer has a hetter understanding of the environmen fal performance demanded at the concomer level for food parked by in Fac The company new injusty developsome medical per high professions

House also be seen in Don's total abou and an American discrete house of the soft miner to communicace recommends to below design remable parks dor con sends haved on anytom-designed polyof balance binment containers And the journey continues at Dow to consolidate the mine multiped by the se-

engineering offerte which include imengineering enorts, which include in proved responsiveness and mice res-

Dew's experience in product develop-Dow's experience in product develop-ment teams and relationship marketing to not reviews " both assetting and three ofit any industrial firm interested in me ent any industrial tirm

Goldenbourie neurifount of 1934 Jan in Washing

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or AIX. Stored procedures reduce network traffic - only the procedure name goes across - a definite advantage.

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rformance and availability \*DB2/6000 protects your investment in your existing host database and systems while allowing you to move comfortably and securely into Client/Server, -

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# In Depth

# Interviewerr CERF



serving ground the between is a challenge because it's not serve to find this

The 'father of the Internet' says intelligent applications. out-of-the-box security and information indexing will draw business users to the network

ew would dispute that Via. ton Cerf. more than any other extraordinarily talented and dedicated networking winard has made the internel what it is to neering work in the devel-

miner with his nice

named of TCP/IP on which ament is hull and through merime in mane, and through unteer groups (see list page 122). Cert's vision and hard-nound commen some been allowed this notwork of networks in grow from use by a handful of defense-oriented spreamhour in the east; 1070s to 15 million meers worldwide today Corf. 50 specificated the task of reging the internet working to iding a tiger by the tail," and that was when it was several or-

Computerscortd's Senior Conrespondent Cary Anthon recently sat down with Cerf. who had just been appointed senior vice persident for data architecture at MCI Communications Corn Cerfleft III. the doubt that he plans to see the Internet continue to grow in both size and importance, especially to hucineer moone

dors of magnitude consiler than it

The Internet is doubling in size every year. Can it con-tinue to scale up indefinitely?

I think we have a reasonable han die on how to get the system to scale up into the billion-network range. That's a target that is incocapable. There are 600 million telephones in the world, and in seven years there could be twice that number. My ultimate either dream or nightmare is that in every piace in which there is a telephone there will be a switching instrument connected to a LAN for the office or household. One can easily imagine 600 mil

lion networks, and that doesn't count all the mobile platforms in automabiles, airplanes and so

forth. So it's not hard to terrify voorself with the possibility that there could be a billion networks

Q How can we get there? We have hard work should of me In building large-scale rout. etr How to handle that menumet.

works is a software challenge and it's an architectural challengs be comes there's an andul let of knowledge needed to make intelliment desirions about what to de with a leigtal packet

Can TCP/IP continue to carry

ft's absorbs been medified to once ate at gigabit speeds. The more interesting challenge is that we're finding applications that need to know more about the available network resources and to say

more to the networks about the recourses they need Until now we've been able to say "Take this packet, and do your best with it." Now we have applications that need in say, "Here's the profile of my requirement: I'm ming to need fill hit/see for the

need 10 seconds on 10 minutes" or whatever. Applications are going Vinton Cerf. page 122

### Internet stats

Commetted notworks worldwide	21,000	
Connected	60	
Connected companiors	2 million	
Consected seers	15 million	
Penn of monthly provide a second	2% to 10%	
SCUPCE U.S. DEPARTMENT OF COMMERCE WASHINGTON, INCREMENT SOCIETY RESTOR IN.		

### Vinton Corf

COMPANIED PROMED ACT OF to have to be sough assessed about

perimeting their recomments and saving something to the personal

Are the internet and its hosts as vulnerable today in a of security on they more in 1995 the year of the late

I'd pay yes

First the network itself needs to newheat its essentees You don't want the nouters controlled by some (5-year-old backer duarethe . . . . . . . . . . . authentication facilities, and this mbably means emptographic techniques within the network.

We also need to work with once ating maters wandow to bein our it decends on whom you ask, I

Come and Day town on house Serve and now somes are octob augmented with r

The demonstrate in their a let of this I be downside is that a local time intormation is not worth scooning permised Some of it mucht be mis-

Romains around the laternet in a challenge because it's not easy to find things. I think what will have non is that some neonic will mai

a listing out of entaloging and ina trying out or carapoging an the not enough to remide hit-

carrying capacity. If we're creat. transfer to be to treat It needs to be a husiness infrastructure. Certain husiness-relatstructure. Certain musiness resispodetection billing collections and establishment of contracts must be embedded in the system

() is the internet Al Gore's dies suc

and the sale of which we for CONTRACTOR DOC 1616 OF ANIMOR AS TOtions will be the bendwidth owilablate and some

ations intra munications invasors to ment the mark of our

One of the things that has made the Internet so wheat and flexible was that there was at least one fixed thing in the enimers. The protect role That created a common addescription a security of the different space, a common way or pronamely boot-effort nacket dollar ers. Now we know that's not sufficient nevenere. Best effort is OK for most those but not for more demanding applications like nack-

of video and narkel was We are feminile sidesonfor enring voice mail electronic mail electronic commones. And in the corporate environment especially we stat into a year rich multiproto col environment: SNA needs surpnort so does DECnet Novell Net-Wasen TCPSP and street comware, TUP/IP and even occa-sionally there's some most soul who's troops to make OSI (Open

Systems interconnecti work I don't oppositely arms that you should be able to use your telephone to talk to your TV but fam looking for some way of creation a more actional framework for all these services so that they can fit

tomi hor The ability to command handwidth as you need it and to allocate it on a varying basis is very attracthe fear imagine busing intellistart boxes on the necessary that are doing dynamic bandwidth alloestion [among applications such as E-mail. file transfer and video evalereseine 1

Q is the internet too open for We started out in the Internet with

the theory that anyone should be able to talk to anyone else. But in the business world complete promiscuity is not desired. What one really needs is the ability to differcotage between the private resources of the corneration which may be some measurableally dispersed, and the ones that one wants to make accessible to the public or to other ormalizations

You might want semmermeable membranes where you might permit anyone to call in but on one to em and or vice versa, or you could go out only to certain piaces. In the data communications coviron ment we tend to have either a petwork that is completely private or completely public; we actually need something at between

What would you like to see open in the office envi-

If I had my druthers we would see a combining of communications Incilities so that rather than houing separate telephone, data and videoconferencing networks for example, we would at least have the canacity consumed by those borne on a common platform. It could be local ATM (Asynchronous Transfer Mode) switching it could be FDDI (Fiber Distributed Data

Interface) or something class The other thing | see is the space war that is taking place on our deale with PCs telephones maybe a notebook computer and the like. I think the space war may be non he harfast a common lineten. ment, and the obvious common instrument is one that is committee

Ed like to have programs that know something about the tasks ( typically perform. I'd like to be able to call up a Rolodey for even nie, and poke a name and have the system make the call Some local coffeens that is knowledgeable about the task I am trying to negform would help maintain so context. Then, in the course of a conversation if I decide to send you something, the system knows

I'm talking to you, and it knows there are near to set to you by E. mail, fax or other means. Q Looking out a few year what skills will be retained

Propie doing corporate communications will have to be very computer application sensitive Software is going to play an increasingly important role. You remember Clipton's campaign slogun, "It's the economy, stupid!"

Well, it's the software, stupid The toughest job any of us is going to have in this complex data petworking environment is figuring out how to diagnose performance problems and anomalies that are almost inexplicable at the

Unless we learn how to build really robust data networks, we will face a very fragile future, and we cannot afford that. We cannot huild an information infrastructure that is brittle

### not doing badly after two decades. . .

ers configure systems that are think It's fair to think of the later. names out of the box. You tenionly net as an example of an information superhiefmay the still kind of a bumpy road, but it's as close as anyone has come to a working example of what such a superhighnear negated be like

I find the analogy occasionally jarring because with real roads. you go slowly out of your driveway. a little faster down the residential reet, then up to 55 mph or so on the histway But in the data commonications world, it's actually OK to back out of the starage at 900 mols. So one of the things likely to

don't get that today; you get very insacure out-of-the-box [systems]. and you have to go to a lot of extra trouble to lock it all up Q To ate for the p

Wide-area Info are growing very rapidly on the internet, and that's causing a revotution in information provision. Organized, centralized information resources such as Compu-

# **Computer Careers**



headline-grabbing disasters it poole come as posserprise to see this new acrocome as no surprise to see this new acro-DRE (Diseases Browns Constitute of "There is a temperature demand for di-

stater recovery skills," says Jeff Marin. stein, president of Contingency Planning Research, a consulting firm in Jericho.

Dernite domand Maninetain acti-Despite demand, Marustein estiwith disaster recovery plans have a fulltime disaster recovery staff, leatend, the responsibility monally falls into the lane of stractal information systems per pel. Rut experts advise IS staffers not to shour off the overs remonsibility too

omioklu "There are a lot of companies looking for people who have put together disas ter recovery plans and tested them." saw Gary Daniels service continuity manager of MAI Data Services, inc. a fiennole) services bureau in Milwankee

### What It takes

m Dates Department of

.

Daniels came to his post six years are after 12 years at a variety of positions. "Disaster recovery is really moving data ceaters," he says, "Who else would have a stood background for diseaster recovery a good oacaground for disaster recovery

centers and has technical support expe-In reality, moving data centers - ship-

SALIDE

APARIA

IBM SYSTEM

ping tapes to alternate sites and bringing un systems and communications lines — - --is only part of disaster recomes Planning is the first and most important job and can be sided by software such as Vici-Day from Computer Compiler Control

are software to descine the company's recovery plan. Instead, he took an exist ing document fone that was advenue to restore only \$4 to 10% of the company's

At Mail Data Services: Duniels did not necessary data representation and address

himmet priority is to get the monthly have ofit check into the hands of the recinient check into the nands of the recurnone when we're in the middle of minited the checks, we follow one procedure: If is harmony 15 deay from the time probe sentiar the checks, we follow another."

Firm though Seamen picked up durafor monorum of the es a sideline to ble oth or IC secondibilities and now unreads reachly Me of his time on it, he values his new planning skills. "You're really nick new planning skills. "You're reasy pien-ing up an understanding that can mini mire business looms from a disease And that's a very valuable skill

Panersinia is a free-funce writer in Amberet

### LEARNING DISASTER RECOVERY DI ANNING MAY SEEM LIKE EXTRA WORK, BUT EXPERTS PREDICT IT WILL BE A SOUGHT-AFTER SKILL

ante Inc in Riderfield Conn Chesha from Comdisco, inc. in Rosemont III. and Chicagobased ChiCor Information Chicago-based univot impremised Management Inc's Disastar, which tracks investory and documents all logistics and procedures pecessary to restore the technological infrastructure

According to David Nolan Condings's senior vice president of marketing and product mahamment if takes resultive one to two weeks for an IS employee to become fully functional in ComPas and another one to three months for that employee to develop the initial disaster re-

to reflect themse he obviously desired as covery tests. A key change was replacing the nian's linear format (which said you don't proceed to Step 2 until Steps 1 and 2 are done) with a modular one that an tiripates multiple contingencies

At the Public Employees' Bettermen System of Number in Casses City Bud Seaman, IS manager and part-time disystem recovery coordinator, has also detailed plans for recovering the depart

ment's husiness functions in the event of a full-scale disaster or a variety of small "Since we're a mablic measuring found our

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# AN situati



Computerworld asked a few network managers to share their most recent difficulties and how they solved thom

Challenger Pure d national to a secsawenge: expand a ad building quickly. naing quickly. one bardware.

Recently, Allied Signal, Inc. in Phoenix faced a regressization that required the expension of one of its networks to a sec-

and building "We had limited fiber canability and a lot of date to come " yave Paul Challent network manager in fact, the company had only one fiber-ontie cable connected to the second building, which was 1,000 feet seems and it accorded to many night

anhaetstorks "We could have had seven more cables out in "Chalker says, "but it would have taken weeks to find a contractor and onder materials." Chalker estimates that this solution would have cost at least \$10 000 to \$20,000. "Plus, there are always a lot of hidden challenges that drive

un the cost," he says. Instead. Altird Signal discovered the Drama Switch a module from Uname mann-Bass, Inc. that takes eight 10M-bit engineering company, so a lot of people

Distance comments and though compression nets them on one Piber Distrib. uted Date Interface pair As a result Al-

find Cinnal was able to one its minitor We expanded our liber expanity without degradation for about \$15,000."

Chalker says, "What would have taken weeks or more took only a costole of days. The Drame Switch needically element and plexad

Es les the section because a leave of the available comments. If a subnot muck more down Allind Comed has the Southillies to use an open comment. Not only was the price right, but we have room to grow." Challenger, a

Challenger Isolate network cabling problems to maintain performance Solution: Separate divisions by using

John Hawkins, senior engineer at Analoric Coro, in Prahody Mass., is resmosible for a 500 nerson network "No re-anshirt than been been to make headers on the network "Heaving years House, on the network. Hawkins says. they once move a moviecus.

have alrested their rayless into the 25have plugged their systems into the 75 cable." Hawking says. "This ist?) so had if only one computer is competed to the wrong cable (increases have two or three incompathy achied any en looking at a incorrectly eatherd, you're lot

To present cubling problems from all to prevent casting prosents from arstelled a bridge for each group Because most of the company's permit traffic is within departments, the bridge localizes most eshing problems

Challenge Add OS/2 to a Banyan Systome Inc. Vince network Columbia Collett between the Internet

Recently Kenneth Wennel network manager for the U.S. Marine Corps in

Come Bendleton Colif manted to load Louis Development Corn's Notes under OS II on a Vines boost natural: House, COLD ON S VINCENDESCO NECTUCE. HOWEVE

configuration conflicts "I asked IRM for help, but they said they didn't have OS/2 documentation specific to Banyan Vines," Wenzel and They told me to look in my networking

manuals. I struggled for over a week and Marine Corps policy prevented Wenzel from selling Banyan directly, so be next ed a message on the Internet. Within days he manipud hundreds of managers most providing a 35-step solution and directions on where to look in the Sanyan manuals Within three hours Wintered was manuals. Within three nours wenzel was able to set OS/2 working on his network He encountefully loaded Notes and non 200 name on above files

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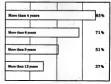
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The average number of unniversions on a networked PC is stendily increasing and cetting PC

creming and gening reare and user is often prohibitive. By using a third-party service provider comnanies not only set access to a wider rener of applications but may also minimize "paid finger-pointing" by vendors

A clitch between, say, Windows and WordPerfect would be addressed withand a dispute or towhore foult it is

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Many systems administrators inherit aupport contracts with their systems. Kaplan save com nanies can save money

simply by knowing which nothers as is still in use and which is not. This means rec ular meetings with unors and sandors to mum the level of use and satisfaction

Mo"t it be nice to call for ical support and have on comeet in al least 10 PC software packages pick up the phone? There are a number of third-party support

inles that promise just that For roughly the same price as vendor support for a single product Software Support Inc. a 2year-old company in Heathrow. roughly 125 of the leading PC and

took posture to neak action en calling for boln users en ter a personal identifi ber and an assigned 11-digit num ber. The technician at the other end is then given information shoul the customer and the system. "When our technicians set you on the nhone they know who you are and the configuration of your system, save Jerry Humier, industry rela tions manager at Software Sun

Like other support orga tions. Software Support bas a variely of pricing plant 900-number calls (\$2.95 per minute), 90-day un-limited numbert (\$89.95), one-year limited support (\$199.95) and 800-number calls and per-call sup-

port (\$22.50 per call). Per-call and toll-call service is also available in larger discounted blocks. ompanies offering simil nervices include Corporate Software, Inc. in Canton, Mass., 900-Support in Lake Oswego, Ore., and Sylves Enterprises, Inc. in Sterling.

-Joe Panepinto

#### Dr. Inc Benealasts

When free-support holdout WordPerfeet Cord recently announced it would inin the monitor make of companies that of for fee-for-service PC notware support. many many realized that when it comes to support, you get only what you pay for.

"I was really sorry to read that Word-Perfect was getting rid of freehie technical support " nave Jon Jaffe, manager of information systems at Roberts & Schaefer Co. in Chicago, "It really marks the ressing of an era

This appropriately is yet another up. welcome reminder that IS managers need to stretch already-constricted hudgets to cover tiered service offerings. These range from 900 number phone support at roughly \$2.95 per minute to high-end packages of unlimited 24-hour. seven-day coverage at flat rates of more than \$10,000 per year Consequently, inles would be wise to think about ways to minimize support costs. Advice from experts includes the following tips: Signing a three- or six



month contract for ex-



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Most companies block 900 comber ontgoing

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## Midrange muddle

The midrange systems market is a dicey investment these in the sector but disagreed on which companies are the best

"The webstility of these stocks will remain "Smith Rames Shearson analyst Shao Wang wrote in a late January report We remain very specific in our recommendations and overall startest being underweighted in the sector. This means smart investors should keep the hulk of their portfolios else-

Digital Equipment Corp. (DEC) exemplifies the uncerrecent quarter. Wang rated the commany a speculative Roy in his report, which he opened with the quote, "He was a

bold man that first ate an overter." Salomon Brothers, Inc. analyst John B. Jones Jr. was less bold and more Hold in rating Digital's turnsround pros-

However, the two analysts switched places in considering Hewiett-Packard Co. (HWP). Jones said HP is "the best of the group," noting that the company has continued to grow its profits despite the intense margin pressure that has plagued the whole midrange sector Wang, on the other hand, said HP is overly dependent on its low-margin printer business for revenue and profit growth and rated the stock

ome." iP is due to report quarterly		reek. Derek Stat
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Top Wall Street firms apparently h midrange prospects		sapre on
Company	Smith Barney Shearson, Inc.	
Digital Equipment Corp.	Buy	Hold
Hewlett-Pockard Co.	Neutral	Buy
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